

TANDY LAPTOP COMPUTING

SEPTEMBER 1991 -VOL. 8, NO. 6

TERRY KEPNER'S

portable 100

A MONTHLY PUBLICATION (EXCEPT COMBINED JULY/AUGUST ISSUE)

Tandy Makes The Grade

At-risk Students Excel with Tandy 102's

More on
DeskMate 3

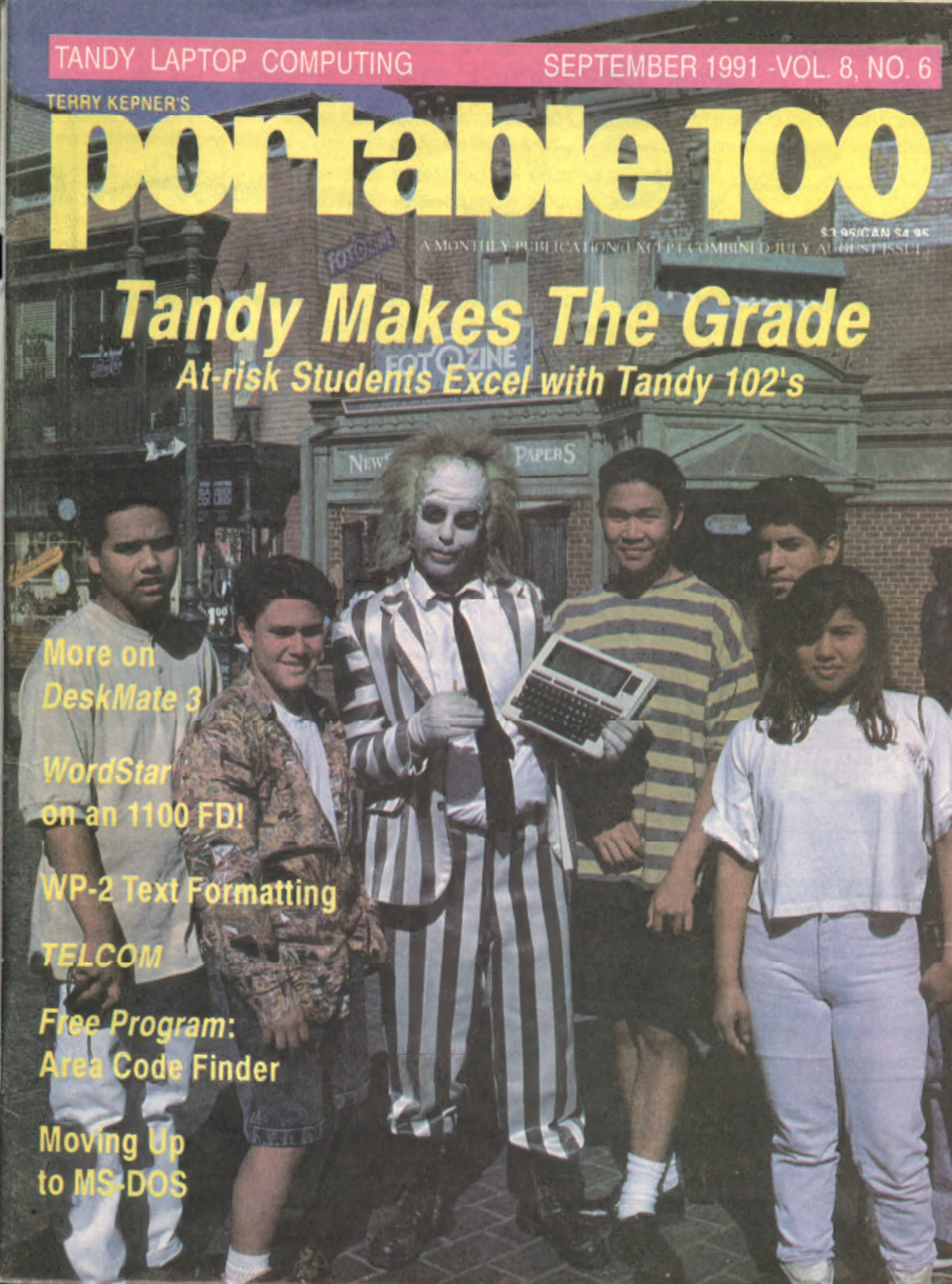
WordStar
on an 1100 FD!

WP-2 Text Formatting

TELCOM

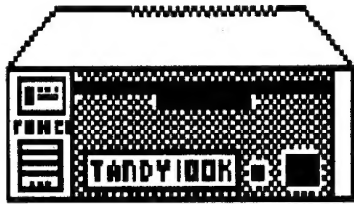
Free Program:
Area Code Finder

Moving Up
to MS-DOS



Laptop and Palmtop Computer Specials

TANDY 100/102/KC-85 OWNERS: TANDY 100K PORTABLE 3.5" DISK DRIVE SPECIAL (Reconditioned units only)
Units come complete with manual, cable, Tandy utility disk and are fully guaranteed by Ultrasoft Innovations for 90 days.



PACKAGE #1: TDD-1 + DISKPOWER + SUPERA = \$159.95 (Reg. \$269.95)
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 PACKAGE #3: TDD-1 + DISKPOWER + ULTRASCREEEN = \$159.95 (Reg. \$229.95)
 PACKAGE #4: TDD-1 + DISKPOWER + ASSEMBLER = \$159.95 (Reg. \$229.95)
 PACKAGE #5: TDD-1 + DISKPOWER + DISASSEMBLER = \$159.95 (Reg. \$229.95)
 EXTRAS: 3.5" DISKS (Quantity 10) = \$8.95 / AC POWER ADAPTER = \$6.95
 UPS GROUND SHIPPING & HANDLING IS EXTRA = \$6.00

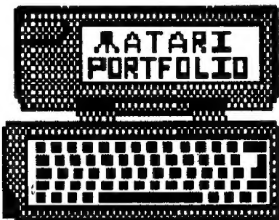
The Tandy WP-2 Word Processor Special (New units only)

Package#1: WP-2 + 128K Memory Chip* Bundle ... \$ 399.95 (Reg. \$ 430.00)
 Package#2: WP-2 + WPDUET (MAC) Bundle \$ 419.95 (Reg. \$ 450.00)
 Package#3: WP-2 + WP2DOS (IBM) Bundle \$ 399.95 (Reg. \$ 430.00)
 Package#4: WP-2 + 128K Chip* + WPDUET Bundle \$ 479.95 (Reg. \$ 530.00)
 Package#5: WP-2 + 128K Chip* + WP2DOS Bundle \$ 459.95 (Reg. \$ 530.00)
 EXTRAS: CARRYING CASE \$49.95 / AC ADAPTER \$6.95 / 200K DISK DRIVE \$ 179.95
 UPS GROUND SHIPPING & HANDLING IS AN EXTRA \$8.00 (*Note: memory chip installed)



The Atari Portfolio Palmtop Computer Special (New units only)

The Portfolio is a 128K Pocket-sized Computer, based on MS-DOS 2.11, with a 40 x 8 LCD screen, only 1 lb weight & with built-in application software.



PACKAGE #1: PORTFOLIO + 032K MEMORY CARD + PARALLEL INTERFACE = \$349.99 (Reg. \$480.00)
 PACKAGE #2: PORTFOLIO + 064K MEMORY CARD + PARALLEL INTERFACE = \$399.99 (Reg. \$530.00)
 PACKAGE #3: PORTFOLIO + 128K MEMORY CARD + PARALLEL INTERFACE = \$449.99 (Reg. \$600.00)
 PACKAGE #4: PORTFOLIO + 128K MEMORY CARD + SERIAL INTERFACE = \$479.99 (Reg. \$630.00)
 PACKAGE #5: PORTFOLIO + 128K MEMORY CARD + PC RAM CARD DRIVE = \$499.99 (Reg. \$650.00)
 EXTRAS: CARRYING CASE \$29.99 / AC ADAPTER \$9.99 / PORTFOLIO BOOK \$17.99
 UPS GROUND SHIPPING & HANDLING IS AN EXTRA \$8.00
 Note: Ultrasoft will accept trade-ins of used Tandy 100/102/200/DVI and accessories (in any condition) against the purchase of an Atari Portfolio or Tandy WP-2 and related accessories.

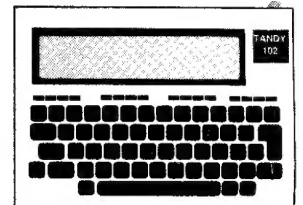
The UltraCard Special for the Tandy 100/102

The UltraCard is a Memory Expansion System for the 100/102, using credit-card sized RAM Cards. The unit is external, weighs only 8 ounces and has dimensions of 6.25"x4.5"x0.5" (WxLxH). RAM Cards will store both RAM-based (.BA, .DO, .CO) and ROM-based (SuperRom, URll, etc.) files. Two cards slots are available, for a total of 512K memory expansion.

UltraCard Interface 100 or 102 + 128K RAM Memory Card = \$349.90
 UltraCard Interface 100 or 102 + 256K RAM Memory Card = \$449.90

Please note that you can upgrade at any time from one card size to the next simply by returning your old card and paying the difference in price between one card size and the next.

The UltraCard for the Model 100 and Tandy 102 is in production now. We are accepting orders on a first come - first serve basis. To begin with, quantities of the UltraCard will be limited. The first orders will only begin to be shipped by the end of June, 1991. The next deliveries will be 4-6 weeks later. Call for details.



Please contact Ultrasoft for a complete 100/102/200/WP-2/Portfolio product listing.



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More Than Just a Laptop User Group

Lapdos II

Turn your Model 100/102/200/NEC8201 into a PC-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to MS-DOS computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Feature rich! (Computer <--> Link Cable required)

WP2DOS

Turn your WP2 into a PC-partner. The only "file transfer" and "file conversion" software available or WP2 to DOS computer owners. Online utilities convert WP2 .DO files to popular DOS word processing file formats ... maintains file formatting codes. Super easy and fast. (Computer<-->Link Cable required)

Computer Link <-->Cables

Custom-built cables specifically developed for use with Lapdos II and WP2DOS. More than a simple "null-modem" cable.

100duet

Turn your Model 100/102 into a Mac-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to Macintosh computer for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Automatic file translations allow your Mac programs to use your laptop files, directly!

Loader

Add-on connection program enables Model 200 and NEC8201 owners to use 100duet.

WP2duet

Turn your WP2 into a Mac partner. Connect your laptop computer or Tandy Portable Disk Drive directly to Macintosh computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Automatic file translations allow your Mac programs to use your laptop files, directly! Maintains file formatting codes.

The Ultimate ROM II

Four programs in one make this more than just a "super" ROM. **T-WORD:** overwrite/insert mode while editing, imbed print controls, control print output (margins, line spacing, page feeds, headers, footers, auto page numbering, bold face, underline, italics, mail merge, labels, and more), pixel-plot view of document before printing. **T-BASE:** true relational base operations, key field sorts, math, report generation, etc. **IDEA!**: outliner program for concept development. **VIEW 80:** see up to 60 characters per line while in TEXT, TELCOM and BASIC, fast processing, easy to read. **TS-DOS LINK:** automatically loads and runs TS-DOS from disk without conflicts (TS-DOS on disk, sold separately)

TS-DOS on Disk

Super fast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. Use by itself or with the Ultimate ROM II or other ROMs

TS-DOS on ROM

When all you need is disk access without using RAM. Super fast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. ROM version includes: file compression in RAM. Program runs from ROM - uses no RAM!

ROM2/Cleuseau

The very best programming tools available for Model 100/102/200 and NEC8201 laptop programmers. Two ROMs in one, and more. ROM2 is a full functioned 8085 macro assembler. Cleuseau adds much needed features to BASIC and TEXT. Call for full details.

Power Pillow

Good-looking, powerful, long-lasting battery pack encased within an attractive black-vinyl holder provides hundreds of hours of battery life. Attaches to the back/bottom of your laptop with velcro (included). Hand crafted and tested. (Requires 4, "D" cell batteries, not included).

Keyboard Bands

Just the right size dental rubber bands necessary to almost eliminate Model 100/102/200 keyboard noise. Great for library and meeting use. Easy to install. Instructions included.

Quick Reference Card

Don't leave home without this handy three-fold card, containing all the functions for Model 100/102 use. Includes a listing of BASIC, TEXT commands and TELCOM settings.

KONEXX

The hottest, new line-attachment for going online though office PBX and hotel phones. Does not require a dedicated line. Active electronics provide much more than simple switching. Attaches, in-line, between the phone handset and the base. Includes clips for hard-wired base-to-handset found in most hotels. Small size - fits in pocket.

RAM Expansion

Expand your Model 100/102/200/WP2 computer's RAM. RAM chips, RAM expansion modules and WP2 RAM disks available. (M100: 8K RAM chips, 64K and 96K RAM Exp Banks) - (M102: 8K RAM, 128K and 256K RAM Exp Banks) - (M200: 24K RAM banks) - (WP2: 128K RAM disk)

Free BBS

Our free-2-use bulletin board computer is available 24 hours a day. Features: free public conference, free classified advertising, free laptop reference material, free newsletter, free downloads, product ordering, assistance, and more. Log on with any computer. Simple menus fit all 40 character, 8 line displays. Fast, interrupt drive, easy to use for beginners. Friendly. No online cost. Unlimited online time. PC Pursuable! Optional online library access \$1 a month.

Program Collections

We have the largest "quality" collection of public domain, shareware and author-specific programs available for Model 100/102/200 users, i.e., text, print, telcom, business, graphics, drives, utilities, games, music, programming, education. Available online or mail order on disk. Listings available.

"Look to Club 100 for the largest selection of performance products to make you a laptop power user. Call today!"

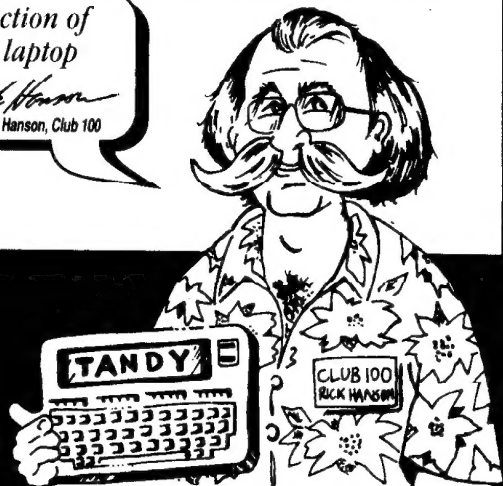
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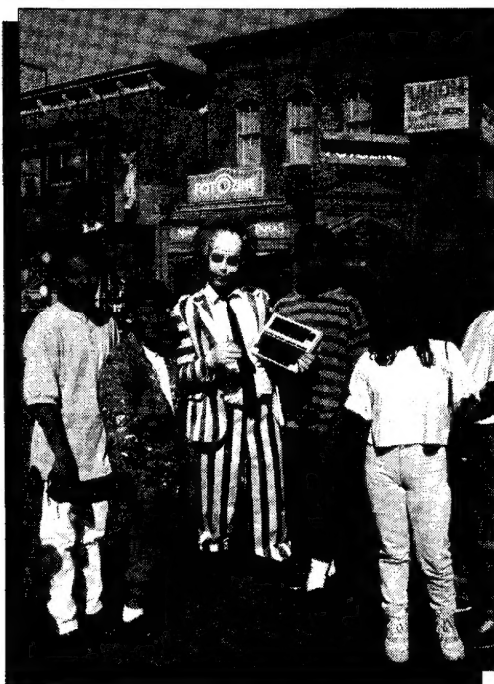
Circle 160 on reader service card.



ON THE COVER:

At Universal Studios, Alhambra High School students teach Beetlejuice the benefits of using the Tandy 102. It could become the computer of choice in the netherworld!

Photo by Cynthia Murphy.



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September 1991

CLASSY COMPUTERS 10

by Micheal Murphy

At-risk students find more self-esteem, motivation, and better grades with Tandy 102's.

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ROM WITH A VIEW

I/O

THE IDEA BOX

NEW PRODUCTS

DEFUSR

PORTABLE 100 CLASSIFIEDS

ADVERTISERS' INDEX

Vanishing stuff and winning attitudes.

Compatibility, teach-in, washboard, update, help.

Laptop strategies.

Tandy 386SX notebook, SCSI host, chordic palmtop.

Chipmunk, Casio, KC-85, and downloading.

Software, hardware, wanted.

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ROM WITH A VIEW

I once saw a cartoon that depicted a ringed planet, maybe Saturn. A look at the rings showed that they're composed at least partly of lost airline luggage. So now we know where that stuff goes!

I'd like to find that cartoon again, because I suspect closer scrutiny would reveal the whereabouts of other wayward items, things like The Other Sock. You know, the one that never returned from the laundry? It's not in the washer. Not in the dryer. It's just gone.

Maybe it's circling Saturn. Whizzing around, tumbling in planetary orbit with your luggage. Or with this month's cover story. That vanished, too. Somewhere between California and New Hampshire, the story, photos, authors' names and rankings of the winning Alhambra High School student essays all faded into the Twilight Zone.

Reconstructing the piece was far more formidable and frustrating than I could have imagined. Whatever could go wrong, did. Backup materials had likewise vaporized; corporate reorganization had temporarily made the author difficult to reach; schedules and phone numbers changed daily; my judge's copies of the essays showed no authors' names, only code numbers; reaching students and teachers in the summer is rough. In desperation, I was frequently tempted to yell "Beetlejuice!"—the name of the demon on the cover—three times to summon help.

Nevertheless, we pulled it off just in time, thanks to author Micheal Murphy and other Radio Shack personnel, photographer Cynthia Murphy, teacher Barbara Sedano, editor David Klein, and a nice lady I know only as "May" at Alhambra High. Their persistence, willingness to work in "hurry-up mode" and play telephone tag at all hours, and brilliant detective work was above and beyond the call of duty. May they never lose another sock to the solar system!

I'm especially pleased to congratulate First Place essayist Adrienne Brown. While all were good, something about her essay immediately grabbed me, and I gave it my vote for first place.

Then, out of curiosity, I showed the essays to other *Portable 100* staffers. In the ensuing discussion I was gradually persuaded that other essays were more "proper," closer to what was expected. So I balked. I changed my vote. And I felt uncomfortable.

When the day came to mail my votes, I showed the essays to editor David Klein and asked his opinion. He replied, "What's your opinion?" I explained that I really preferred Ms. Brown's, but ...

Then he said what I'd been unable to articulate. The others were indeed more "proper," more "formula," more—SAFE. But Adrienne broke away. Forsaking safety, she dared to be different. Yes, that's what drew me to her essay—SHE TOOK A CHANCE! I admire that, and she did it well.

To Adrienne: Taking chances isn't always rewarded, but as a former teacher of mine used to say, "No guts, no glory." I changed my votes back, mailed 'em off, and felt all kinds of better. I'm told you won by one vote. Congratulations! (To both of us!)

And congratulations to Veronica Rito, Rosario Sosa, Lupe Alejandre, and Eileen Guzman, too! Not only are you all now published authors here on Earth, your fine work is also orbiting Saturn!

Nuge! Nuge! Nuge!
(Uh-oh!)

Toolbox

Manuscripts were typed into Microsoft Word 4.0 on a Tandy 1500 HD, where they were edited, spell-checked, and had basic format instructions inserted. From there they were loaded into a Tandy 4000 (80386 CPU, Tandy EGA Monitor, Tandy LP-1000 LaserPrinter) desktop computer and placed into Aldus' IBM PageMaker 3.01. Once there, design decisions on photo, figure, and listing sizes and placements were made. Here, pull quotes are placed, headlines, intros, and bylines are sized and positioned, and advertisements positioned.

Normally, the Tandy LP-1000 is capable of emulating only a Hewlett Packard Laser Printer Plus, but with the

addition of the Destiny Technology Corporation (300 Montague Expressway, Suite 150, Milpitas, CA 95035. (408) 262-9400) PageStyler 4.5MB kit, the LP-1000 is turned into a fully-compatible PostScript printer, with all 35 native fonts that are found in the Apple LaserWriter Plus printer. The Destiny PageStyler is available through the Tandy Express Order Hardware system.

Page previews were output from the LaserPrinter. When everyone was satisfied with the appearance, final pages were output and artwork and lineart ads were positioned. The finished magazine was then delivered to the printer, who printed it, labeled it, and mailed it to you.

portable 100

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The Portable 100 Bulletin Board
603-924-9770
(300/1200/2400—8,None,1)

Portable 100 (ISSN 0888-0131) is published by Portable Computing International Corporation, 145 Grove Street Ext., P.O. Box 428, Peterborough, NH 03458-0428. *Portable 100* is an independent journal not connected with any hardware, software, or peripheral equipment manufacturer. *Portable 100* is published monthly, except for a combined July/August issue in the summer. Entire contents Copyright © 1991 by Portable Computing International Corporation. All Rights Reserved. No part of this publication may be reproduced without written permission from the publisher. Portable Computing International Corporation makes every effort to assure the accuracy of articles published in *Portable 100*, but assumes no responsibility for damages due to errors or omissions. Subscription Service: All subscription correspondence should be addressed to *Portable 100*, Portable Computing International Corporation, 145 Grove Street Ext. P.O. Box 428, Peterborough, NH 03458-0428. U.S. subscription rates: \$19.95, one year; \$34.95 two years. Canada and Mexico: US\$24.95, one year; US\$44.95 two years. All other foreign (surface mail): US\$39.95, one year; US\$74.95 two years. Foreign Air Mail, add US\$50 per subscription year. All payment, except Canada, U.S. funds drawn on U.S. Bank. Second-class postage paid at Peterborough, NH 03458, and at additional mailing offices.

POSTMASTER: Send address changes to: *Portable 100*, Portable Computing International Corporation, 145 Grove Street Ext., PO Box 428, Peterborough, NH 03458-0428.

SUPER ROM COMPATIBILITY

I would like to know what is compatible with the Tandy 200 version of Super ROM. I'm having partial success with POWR-DOS. I will only buy things that work with Super ROM, so I don't buy much. It would help immensely if you could publish a list of known compatibilities and incompatibilities, ask for one to be included in small print in the Super ROM ads, or ask vendors (Dvorak Keyboard System, for example, or XOS for another) to state in their ads whether their software is Super ROM compatible.

Thanks for continuing support of a great line of laptops. I'm looking forward to learning about compatibility with Super ROM. I spend several thousand a year on computers and would like to add some new tricks to my faithful old "lapdog."

**Bernie Bersherse
Ketchikan, AK**

With so much software out there and various versions of each, it's difficult to track what works with what. I've taken pains to make my software compatible with someone else's, only to have them release another version that's incompatible. So I rewrite, then they rewrite, and I rewrite—AARRGGHH! A never-ending game of leapfrog. It's not usually that bad, but you get the idea.

Publishing a list of compatibility info in Portable 100 is a nice idea, though it's a big job and would likely require periodic updates. We'll look into it.

Over time, vendors gain an idea of which products are compatible with theirs. They can rarely test all other existing products with their own, but customers can provide valuable feedback. And while it would be nearly impossible, and quite expensive, to list compatibility information in their ads, any reputable vendor will gladly inform you of incompatibilities, and fixes or workarounds, if you inquire.

For example, I recently learned from a Super ROM customer of a strange interaction between Lucid and LapDOS II in which LapDOS loses track of some Model T files under certain conditions. Though it's nothing serious (the files are there, but a quirk in LapDOS makes it "blind" to them), it's certainly disconcerting to the user. This problem—and its solution—have been added to my list, to be shared with anyone who writes or calls Tri-Mike Network East to inquire.

Incidentally, I'll soon launch a regular column in Portable 100 for users of Super ROM and other TMN East products. It will feature hints, tips, compatibility information, problems and solutions, and who knows what else. I figure if one person contacts me with a problem, many others probably have the same or similar problems and can benefit from the exchange of information. I encourage anyone with ideas, suggestions, tips, hints, unusual uses, interesting Lucid spreadsheet templates, or whatever, to contact me at Tri-Mike Network East, P.O. Box 372, Peterborough, NH 03458, telephone (603)924-TMNE.

That goes for you, too, Bernie. Tell me about your "partial success" with POWR-DOS, okay?

-MN

A list of compatibility info is a nice idea...

COMPUTER SHOW, SALE, AND TEACH-IN

On Saturday, September 28, 1991, an "All Westchester Personal Computer Show, Sale, and Laptop Teach-in" will be held from 10 AM to 4 PM at the Rochambeau School, 228 Fisher Avenue (corner of Tibbets), White Plains (Westchester County), New York. This event is sponsored jointly by White Plains Continuing Education and the Robotic Society of America.

Parking is free and includes a ramp for the disabled. There is one admission charge of \$7.00 per adult. There will be vendors of discounted hardware, software, books, motherboards, accessories, etc. Since this is a "teach-in," many computer mini-courses will be given during the day at no extra charge.

We are also seeking additional vendors and teachers for this show. For more information and/or a \$1.00-off

discount ticket and class schedule contact Robotic Society of America, P.O. Box 54-H, Scarsdale, NY 10583-0054, telephone (914)633-8427.

**Bill Schachter
Executive Director**

THE TANDY "WASHBOARD"

I ran across an article that you might be interested in reprinting in Portable 100. It's from the May-June 1991 (Vol. 2, No. 3) issue of *Midnight Engineering*, titled "Notebook Computer Finds Home As Industrial Controller." I've enclosed a copy for you to read and see if you want it. I found it very interesting and a good example of how versatile these little machines are.

**Brad Whitlock
Rockford, IL**

Thanks for passing that along, Brad! Having seen the article mentioned on CompuServe, I'd already acquired a copy. It's a very interesting story by Denver Post columnist Ed Quillen about how his brother Kurt adapted a Model 100, and later a Tandy 102, to act as a controller (dubbed the "Washboard") for heavy-duty industrial washing machines. It's so cost effective and works so well in the harsh industrial environment, that it's turned into a full-blown business for Kurt, who sees even broader applications for this technology.

We'll contact them to see if we can share the article with P100 readers. Meanwhile, for more info on the Washboard (and a special deal for hobbyists and experimenters), contact Kurt Quillen by mail at 145 Sunset, Longmont, CO 80501, by CompuServe Mail (ID 71660.721), or by telephone at (303)776-8140 "during reasonable hours."

For more information on *Midnight Engineering*, which I've found to be a very interesting magazine, write to *Midnight Engineering*, 111 E. Drake Rd., Suite 7041, Fort Collins, CO 80525. And tell 'em we sent you!

-MN

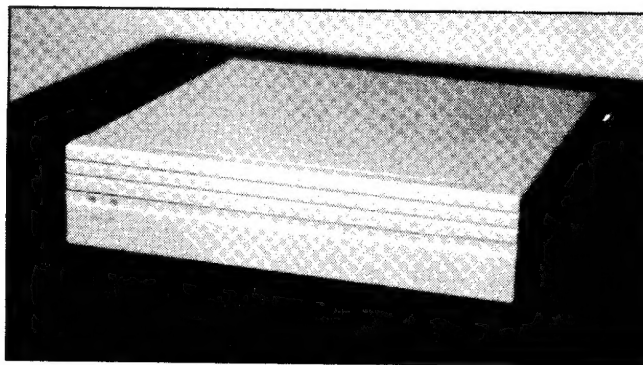
1500 HD REVIEW UPDATE

In my review of the Tandy 1500 HD (July/August '91) I mentioned that my copy of the Norton Backup (version 1.0) did not work. I have since acquired version 1.2, and guess what? It still doesn't work with the 1500 HD.

The real reason for this letter is that version 1.2 has an undocumented feature that may assist people that are hav-

Introducing The Ultimate In Portable Storage Devices!

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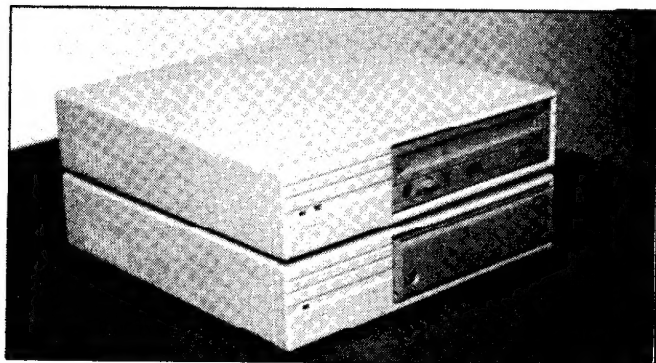
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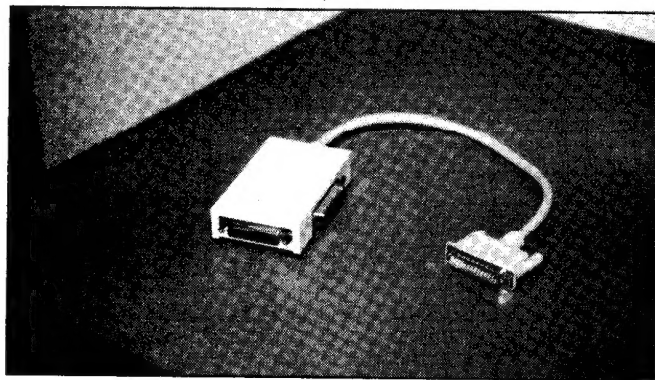
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TMNE says "Send it back in 30 days for a full refund if you don't agree."

WRITE ROM is the definitive word processing extension for the Model 100. PCSCG produced the first text formatter for the Model 100, now sold by Radio Shack as Scripsit 100. Now, 18 months later, PCSCG introduced WRITE ROM. Those who have experienced it say WRITE ROM literally doubles the power of the Model 100.

WRITE ROM — as its name implies — is on a snap-in ROM. You simply open the little compartment on the back of the Model 100 with a quarter and press WRITE ROM in. It's as easy as an Atari game cartridge. You can use other ROM programs like Lucid whenever you wish.

WRITE ROM lets you do every formatting function you'd expect, like setting margins, centering, right justifying and creating headers and footers. But it does them under function key control.

WRITE ROM remembers your favorite format settings so you can print a document without any setup, but you can change any formatting or printing parameter instantly with a function key.

WRITE ROM's "pixel mapping" feature shows you an instant picture on the screen of how your printout will look on paper.

In all there are 64 separate features and functions you can do with WRITE ROM, and some of these features are truly breakthroughs for the Model 100.

First, WRITE ROM lets you do search and replace. Any word or phrase in a document can be searched for and replaced with any other phrase where the search words appear.

Second, WRITE ROM lets you send any text (formatted or not) to any other computer over the phone with just a function key. What's more, it dials and handles sign-on and sign-off protocol automatically.

Third, WRITE ROM has a wonderful feature called Library that lets you record favorite phrases, words or commonly used expressions (often called boilerplate).

Any place you wish Library text to appear you just type a code. WRITE ROM automatically inserts the text just like a Xerox Memory Writer. Picture what you can do with that kind of capability.

WRITE ROM is blindingly fast. No one can claim faster operation. Because it is on ROM it uses virtually none of your precious RAM. It works with any printer, serial or parallel. You can make a duplicate copy of a document file under a new filename. Rename or delete (kill) any RAM file with function key ease.

This description only scratches the surface of this amazingly powerful piece of software. Dot commands allow control of such things as margins, centering, line spacing and other changes in the middle of a document. Most are WordStar[™] compatible.

A mailmerge feature allows you to send the same document to every name on your mailing list, personalized for each recipient.

WRITE ROM enables you to do underlining, boldface and correspondence mode as well as any other font feature like superscripts that your printer supports, in a way that many users say "is worth the price of the program."

To underline you don't have to remember a complicated printer code. You just type CODE u, and to stop underline, CODE u again. The CODE key is to the right of your spacebar. Boldface? CODE b to start and stop. Easy to remember and do. Five different printer features of your choice.

We couldn't list all the features here. For example, you can select not just double space but triple or any other. You can use your TAB

key in a document. WRITE ROM allows you to indent. This means you can have paragraphs with a first line projecting to the left of the rest of the paragraph. WRITE ROM has a feature unique for any word processor on any computer. It's called FORM. FORM is an interactive mechanism that lets you create screen prompts so that you or someone else can answer them to fill out forms or questionnaires.

With FORM, any place that you had previously typed a GRAPH T and a prompt in a document, WRITE ROM will stop and show you that prompt on the screen. You can type in directly on the screen and when you press F8 you see the next prompt. It goes to a printer or a RAM file.

Think how you can use FORM. A doctor or nurse could use it for a patient's history with each question appearing on the screen. An insurance salesman could use it for his entire questionnaire. You could construct a series of prompts to answer correspondence, typing the answers, even using Library codes. This feature lets you answer letters in rapid-fire fashion, each with personalized or standard responses.

Before WRITE ROM you had to be a programmer to create a series of prompts. Now it's as simple as GRAPH T.

PCSCG makes the claim that WRITE ROM is the easiest, fastest and most feature-rich formatter for the Model 100. We're happy to offer WRITE ROM because it expands the 100 to a dimension of text processing you cannot equal on even larger computers.

We brashly state that WRITE ROM is the best you can buy. But put that to the test. If you aren't as excited as we are, return it for a full refund. Priced at \$99.95 on snap-in ROM. Mastercard, Visa, American Express and COD. Please add \$5.00 shipping and handling charge.

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ing trouble with their machines. The program has two configurations that will try to adapt to as many machine configurations as possible. The "Low DMA" and "Most Compatible Hard Disk" settings will not take advantage of certain hardware features available on most machines. Thus, it will encompass a wider range of hardware at the expense of slowing down the backup process.

Version 1.2 adds a "Most Compatible Memory Allocation" setting to take care of memory allocation/corruption problems. To set this, at the "Configuration Test" menu, type ^O (control-O) and you'll get another menu of three selections. Select the third item and return to the program.

The Norton Backup program looks like a neat program, but my recommendation for Tandy 1500HD owners is still the same: Don't buy it! It won't work. Since my copy of *Fastback Plus* doesn't work, either, I am reduced to using the DOS backup supplied with the 1500 HD.

Stan Wong
Santa Ana, CA

FUNKY PRINTER GRAPHICS

Bill Gerber's article, "IBM Character Graphics on The Model T" (April '91) poses a question about the reason for the upper order ASCII characters. 'Tis easily explained.

When IBM released the original IBM-PC you had exactly two display options: the Monochrome Display Adapter (MDA) or the Color Graphics Adapter (CGA). MDA was less expensive and produced very, very sharp text. Its dot intensity for text characters was about the same as the current VGA standard. But ... MDA was designed to do ONLY text. No graphics allowed. With MDA, no way to simply draw a line from point A to point B.

So IBM included in the MDA ROM's a way to allow limited graphics on an otherwise text-only display. This was necessary, considering that text looked lousy on a CGA adapter since it had low resolution. Most PC's were (and are) going into offices where low-resolution color graphics weren't needed.

The upper ASCII characters got included in printers so you could print out what you saw on the screen. Plus, the original IBM-PC printer was a customized Epson model. IBM simply included those upper order ASCII characters in the ROM's for the IBM graphics printer. The PC took off, everyone started selling clones, and those upper ASCII became part of what was necessary to be a clone.

The first PC I ever used was a 64K IBM-PC with two 360K floppies and an

MDA monitor. At that time IBM was actually selling software on cassette tape for the PC.

Hope this answers Bill Gerber's query.

Robert Rice
Houston, TX

HELP FROM A READER

Enclosed, please find copies of two articles which may be of use to Terry Sharp, whose letter appears in INPUT/OUTPUT (May 1991). Please see that he/she(?) gets the information. I am sure that although one of the articles is from 1989, those companies are still around. Also, as you are no doubt aware, there is a handicapped users forum on CompuServe, which would probably be the best way to get all kinds of info on current products, services, etc. I will gladly pay you to forward this info to Terry.

As ever, I LOVE your magazine, and for all I care, you can publish it on toilet paper—because the content is always interesting, informative, fun, delightful ... so I shall gratefully read it any way you produce it!

Rita Laura Potok
Los Angeles, CA

Don't buy it!
It won't work.

Rita, thanks for passing along those articles ("The Adaptive Laptop," Portable Computer Review, July 1989; and "Computing for The Disabled," Computer Shopper, April 1991). We'll forward them to Terry (at our expense, but it's very kind of you to offer). And we will, if we can, contact the companies mentioned and put together a special article just for Portable 100 readers. (I'm hereby seeking volunteers, readers. Wanna become a famous author? Call me!)

By the way, we actually tried publishing P100 on toilet paper. Unfortunately, at the office Christmas party we got hold of a bad batch of Terry Kepner's "All Star Five-Alarm Chili." You can probably imagine why we never published the January and February '91 issues!

-MN


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Laptop Strategies

Hello again. Have a good summer? I did—a benevolent doctor turned me on to one of the few drugs I can take without looking like I'm doing an impression of the little girl in *The Exorcist*. It's called Seldane, and it is the only thing I've ever found that stops my hay fever dead in its tracks.

Having hay fever and living in Oregon is a lot like having heat rash and living in Hell. But Oregon is beautiful, so I live with it. How beautiful? Well, find out for yourself—it's a great place to visit. Just bring your camera, your umbrella, and your laptop.

Ah-ha! You knew I'd get around to computers sooner or later, didn't you? OK then; on to the business at hand.

My two previous columns have dealt with living with an IBM-compatible laptop. Although I've been talking about the Tandy 1100FD, the things I've talked about apply to most laptops. Such is the case this time as well.

I'm going to conclude this "laptop trilogy" by sharing a few of the strategies that I've learned along the way. Some may be obvious to all but the newest users; others are the result of years spent submerged in isolation tanks, my body crammed full of organic vitamins, meditating deeply enough to actually understand the meaning of the Beatles lyric: "I am the Eggman, I am the Eggman, I am the Walrus ..."

ANYway, the first reason many people buy a laptop is to travel with it, so let's begin there.

= TRAVEL =

Obviously, when you travel you run the risk of losing your laptop. Most of the laptop magazines will tell you to put your name and address in a text file that's displayed automatically every time your machine boots up. Not a bad idea—IF that disk is in the drive when you lose it. IF the person who finds your computer doesn't eject the disk before he discovers how to turn the computer itself on. IF the

disk hasn't been damaged or IF the file hasn't been corrupted or IF the battery isn't dead—

Well, you get the idea. Always seek out the simple solutions. In this case, just write your name, address, phone, and reward offer on a self-adhesive mailing label, apply it to the bottom of your machine, and cover it with a strip of clear packaging tape to keep it from smearing if you set it down on something damp (like a just-cleared table at your favorite restaurant).

Worried about your disks surviving the X-ray machines and metal detectors at the airport? Here's a simple solution for everyone who has at least a little advance notice of their travel plans:

Using DOS's *DISKCOPY* command, create exact copies of the disks you plan on taking and simply mail these copies to your destination. When you get ready to return, copy your current disks to the backup disks and mail them back home just before you leave.

Additionally, for the hypercautious (or anal retentive) among you with accounts on networks like CompuServe or GEnie, before you leave, you can upload your important data to yourself as E-mail, easily accessible to you while on the road with a phone and a pocket modem.

= HOME =

For most of us, travel comprises a small amount of our laptop time. Living with your laptop on a day to day basis will be easier with some of the following techniques.

One of the best things I ever did for myself was to create menus on each of my laptop disks. These menus are very simple to create using any word processor/text editor that can save in an ASCII format. I use *Qedit* (see last month's column) myself.

I name this file *MENU*, and I add the line *TYPE MENU* to my *AUTOEXEC.BAT* file to make the com-

puter display the menu automatically every time I turn it on. On my primary work disk, my menu looks like this:

```
AVAILABLE SELECTIONS
=====
[A] Word Processing
[B] File Management
[C] Read Text Files
[D] Backup This Disk
=====
```

In the same root directory on the disk, I have files named *A.BAT*, *B.BAT*, and so on. Here's what *A.BAT* looks like:

```
@ECHO OFF
CLS
CD\QEDIT
QEDIT
CD\
CLS
TYPE MENU.BAT
```

That's all there is to it. Step by step, here's what happens: The first two lines simply keep the screen clear while the file is executing. The next two lines switch me to the directory where I keep my text editor and run the program, which is named *Qedit*. When I quit *Qedit*, the batch file resumes running, and carries out the remaining instructions, which return me to the root (main) directory, clear the screen, and reprint my menu.

It's easy to do, and it's even simpler than I've probably indicated here.

ADD A DISK DRIVE

The next thing you can do is to fix the biggest shortcoming the 1100 FD has by adding a second disk drive. I know how you can do it without adding any weight or bulk to your laptop. Even better, I know how you can do it for FREE!

Want to know more? Then just send your check or money order in a self addressed envel—

—oh, hi Nuge, what are you doing here? Huh? Show me what in the closet

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April		OUT				OUT			
May		OUT				OUT			
June		OUT							
July		OUT		OUT		combined July/Aug. issue	combined July/Aug. & Sept. (Summer 1989)	Not Published	combined July/Aug. issue
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...? I don't see anything— YOUGH!
(later)

... sorry about the delay. I was just reminded (ouch) that a true Zen master should share his knowledge openly, without thought of personal gain. Jeez.

So anyway, the free second drive is called a RAMdisk, and it works like this: you can tell your computer to set aside a certain amount of memory (RAM) and to use it just as if it were a physical disk drive.

All you need to make this work is a small (under 3k) file named *VDISK.SYS*. Where can you get this file? You've already GOT it! *VDISK* is included with most current versions of DOS, including the DOS disk that came with your 1100 FD.

To use it, just copy it to the root directory of your disk. Next, create a text file named *CONFIG.SYS*—you can do this directly from DOS by typing this in at the A:> prompt:

```
COPY CON CONFIG.SYS
DEVICE=VDISK.SYS 128
```

Now, just push the F6 key on your computer, then press ENTER, and you've created the necessary file. The next time you boot your computer with that disk in it (provided you've used the *SETUP_10* command to tell your 1100 FD to bypass *DeskMate* and check the A drive for the

presence of *AUTOEXEC* and *CONFIG* files; see your documentation for details), it will create a 128K RAMdisk for you. You determine the size of the drive by the number used in the *CONFIG.SYS* file.

Since the 1100 FD reserves A and B for the single floppy drive and C for the ROM chip, your new RAMdisk will be drive D. While you do NOT want to use this new drive for file storage (the contents are INSTANTLY vaporized when you turn the unit off), the RAMdisk can save your sanity when it comes time to transfer files from one disk to another.

Just copy your files from the first disk to the RAMdisk, remove the first disk and replace it with the destination disk, and copy the files back from the RAM-disk.

CAPTURE A DOWNLOAD

Another situation where a RAMdisk is handy is when you're downloading information from a network. My terminal disk automatically boots a 256K RAM-disk. When I log on to GENIE or CompuServe, the info I capture is spooled to the RAMdisk. This saves both time and battery life, since the physical disk doesn't have to be accessed.

When I'm done, I just slip my capture disk into the drive and dump the files

from D to A (just using COPY), where I use the remarkable shareware program named *LIST* (see last month's column) to read them at my leisure and clip the best parts to a new file.

There's so much more I'd like to share with you, but the old word counter tells me I'm about done whether I like it or not, so I'll leave you this one last tip: Never mix ammonia and bleach.

Wait, no, that's not it! It's this: If you haven't already, get a CompuServe or GENIE account. As of this writing, both services offer flat rate access to much of their offerings, and both have huge libraries and message bases filled with all kinds of information about your laptop, both specifically and in general.

Don't waste a lot of your time trying to reinvent the wheel. If you have a question, SOMEone on CompuServe or GENIE will have the answer. So sign up, log on, and drop in.

by Michael Daigle

Michael can be reached by mail at 2125 North Farragut, Portland, OR 97217, on CompuServe (ID 76166,3303), and GENIE (DAIGLE).

Classy Computers

Tandy 102's perform miracles in the classroom.

by Micheal Murphy

I imagine a room full of tenth graders with so much energy that, if you could bottle it, the energy crisis would be over. You would expect them to be in art or drama class or P.E., but not in an English class.

What has these kids so excited? They do all their work on Tandy 102 laptop computers. They take them to all their classes to take notes and home to do their homework. And they do all their writing

for their English class on it. They even take them along to make notes on outings and field trips, such as their recent Universal Studios trip (pictured on this month's cover).

The day I stopped in, no students were absent, pretty normal for this class. The earlier English class, on the other hand, which did not use the laptops, had seven students absent, also normal for that class.



The students are proud of their computers, their school, and... themselves. Photographs by Cynthia Murphy.

My Tandy and Me

by Adrienne Brown

"Hey nerd," my so-called friend says to me. "What's up!? How come you're carrying that thing?"

What thing?

"That big piece of luggage!" Then they all laughed at me.

One day you're going to find out that not knowing about that "big piece of luggage" is going to leave you in the dark, full of ignorance about computers and technology.

"Yeah right. Anyways, what are we going to do tonight?"

Well I have to do a history report.

"Gosh! You have been doing too much work lately."

Well, for one thing, there's no such thing as doing "TOO MUCH WORK," but I do think there's such a thing as doing "too little work"! I think you'd better watch yourself. Not to be mean or anything, but I think you need to pull yourself up a little, because you're falling and you're falling pretty fast.

"Yeah right. Whatever happened to the Adrienne I used to know!? The part animal, the people people person."

I'm still here. It's just that I'm growing up, and I'm not afraid to leave you or

anybody else in the dust! I need to learn more about computers and technology, because computers and technology is our future, and a good future it is going to be. Not knowing about technology can hurt you, hurt you bad. Knowing about technology can get you a very good job.

"A-huh, yeah sure."

... "Oh my gosh!" I received a letter telling me that I have a high school reunion. I guess it has been ten years since I've seen any of my high school "friends," and getting that letter in the mail about our high school reunion really has got me excited. I honestly would like to see how my peers turned out! I also would love to see Mrs. Sedano. Boy I can't wait. ...

... "WOW, is that Adrienne?" "Yeah it is." "I thought she was going to be a bum when she grew up." I heard so many whispers it was hard to believe. I guess that people didn't have any faith that I could be anybody important.

Well, I sure showed them and myself. But there was at least two people who thought I could be successful and that was Mrs. Sedano and the Tandy Corpo-

ration. If it wasn't for them and my mom, I wouldn't be as successful as I am. I don't think I would have had the self-esteem to do it by myself. I wonder how my Tandy class is doing. I kept in touch with most of them. Actually, they're doing pretty well. Well, the people who I stayed in touch with are doing really well compared to those stiff statistics they put us up to. I think that we broke that silly statistic when the first person in my class got her Tandy 102.

"Adrienne, Adrienne, wake up! You got to go to school. Today's the day you turn in your report for the contest." Well, I guess all of that was just a dream, but sometimes dreams DO come true.

Today is the day of computers and school. Many people aren't as thankful for their school life as I am. The reason for my gratitude is because it is simple, wonderful, and enjoyable to be able to do my "work" and learn technology at the same time. I realize that there are people who pay an unreasonable amount of money to achieve such wisdom in computers that I have already achieved in my adolescence, for FREE. I know I will use this wisdom in a good way.

Cooperative Learning in this school also uses laptops to promote self-esteem and creativity. They work in small groups with one person entering the ideas into the laptop and all the others in the group brainstorming. Then going back and revising and editing these ideas, the students amaze themselves with the level of writing that they now are able to generate.

Since I work with computers all the time, I take for granted the power they unleash for editing and revising, the legibility and effortlessness of getting ideas down before I lose the thought, allowing me to go back and revise to an easier-to-read style.

But as I watched these students do it for the first time, I saw the amazement in their eyes and finally the smile that says, "Hey, this is pretty good!" It made me forget that computers are cold and heartless—if you don't do it right, it won't work. These computers don't yell and scream at you. And once you master a computer, it doesn't change the rules.

So skills can be built one upon an-

**Once you master
a computer, it
doesn't change
the rules.**

other, confidence is established, self-esteem grows, and more skills are mastered. Finally, the student becomes the teacher to the next one needing help.

A MODEL OF TECHNOLOGY

Alhambra High School is located just outside Los Angeles, California. The Tandy 102 is being used there by the Advanced Placement Social Science students and the C-level English students. Since it is a Model Technology School, tours of the campus are available, and the program has been presented at many state and national conferences.

The Tandy 102 has been on campus for approximately four years, and in that time, none of the units have been lost or stolen, and only four have needed repairs. The students sign out the laptops for the entire year using a financial responsibility form similar to the one used for football and band uniforms. Their

parents are also required to attend a meeting explaining the program.

The cost of one lab consisting of 28 laptops, 4 printers, and accessories is about \$18,000, not including a locking cabinet for the 102's when the students are in P.E. or when they don't need to take the units home.

Printers are located in the classrooms and in strategic places referred to as "docking stations." The students do most of their text editing on the Tandy 102's and then upload (transfer their files) to a Macintosh using *Microsoft Works* to generate finished documents.

They're also now testing the *Write ROM* from Tri-Mike Network East (see ad on p.6) to ease the potential bottleneck created by the limited number of Macs and the expanding number of Tandy 102's.

PUTTING IT TO THE TEST

The proof of the pudding is in the writing. We knew that the attendance was up, the students were motivated, and they were doing well. But what did the students think? To find out, we had an essay contest entitled, "How the Tandy 102 Improved My Life."

Continued on page 13.

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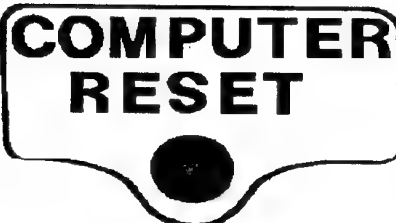
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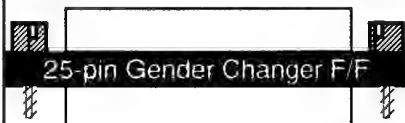
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How the Tandy Model 102 Improved My Life

by Veronica Rito

This is my first year attending Alhambra High. Mrs. Sedano placed me in her Tandy class, in the first semester of this school year. Before being placed in the Tandy class, I was in her English class, which didn't use the Tandys. I thought it would be great to be in a class that used computers for several reasons. First of all, having a computer is a new and unique fun way of teaching. Secondly, not only did I learn the specific subject but I also learned and improved other skills. It also gave me a chance to prove that others my age can be responsible. Therefore I encouraged the continuous use of the Tandy Model 102. I feel this opportunity will be beneficial for my future in the technological world of computers.

Using the Tandy Model 102 has been a unique fun way of learning. Not many students get a chance to work with a

computer and that makes my learning experience unique. It is fun because we are the only students on campus that have and are issued a Tandy. Throughout the school year, I have looked forward to attending school daily because the Tandy class is so much fun. In my English class it has increased my ability to pay more attention. I've also gained a special interest in this class, which I didn't have in any other class.

Being able to experience the use of the Tandy Model 102 in class has taught me many other things from the specific subject. I have learned how to use a Macintosh with a Tandy Model 102 by loading things to the Macintosh. I've also learned how to scan, which helps enlarge pictures. In addition, I've enjoyed the use of the Tandy because we don't have to carry pencils, pens, paper, and binders.

In addition to making learning fun,

the Tandy gave me a chance to prove my responsibility as well as others my age. Not many schools would be willing to risk the money and buy computers such as the Tandy Model 102 for students. I think that having this class has proven to many people that kids my age can be given the responsibility of a Tandy. All of my classmates have taken good care of their issued computers, as I have. I think that Alhambra made a wise investment in issuing Tandys to my English class.

I hope that having this class use the Tandy Model 102 will encourage other schools to make the same change in teaching and issue Tandys to their students. As you can see, the use of the Tandy Model 102 has improved my educational skills. For this reason, the Tandy Model 102 has been wonderful and delightful.



Second Place

How the Tandy Computer 102 Improved My Life

by Rosario Sosa

The Tandy 102 Model changed my life all around. First of all, when my teacher Mrs. Sedano told us that we were going to get computers and we were going to get to take them home, I thought it was a joke. But when the teacher came with all these boxes and I saw what it was, I couldn't believe it was the computers. I thought that was really neat, and about four or five days later, we got our computers, and we got to keep them until the end of the year.

The first day I took it home I felt proud

of myself because my parents were telling me how proud they are of me, and my brothers and sister liked it a lot because they got to do some of their homework on it. Also with this type of computer, you can carry it around. And having this computer, my teacher has showed me more about computers than what I knew.

It taught me to be more responsible. I'm saying this because if I lose the computer, I am going to have to pay 500 dollars for it, and besides that, I am going

to have my pip kicked by my parents.

You know that it's only 2 pages, so here is mostly all my reasons: no paper to carry, better to handle, helps me to understand computers better, improved my grammar, I don't have to carry pens, makes learning more fun, makes work faster for me, and last but not least it improved my typing skills.

This is how the Tandy 102 Model changed my life.



Third Place

Continued from page 11.

First prize would be a fully equipped Tandy 102 and printer, all accessories, and the Super ROM (also Tri-Mike East, back cover). The rest of the prizes would be left up to the students to determine and the business sponsors to provide. After all, it was the students' contest.

What is important to today's high school students is very different from when I was in high school. The prizes they wanted surprised me. They wanted to meet sports superstars, go to Magic Mountain (an amusement park), Disneyland, the Bahamas, have a game against a professional sports team, and receive computers, money, and free meals somewhere. Experiences are what they are looking for. So much for the material world.

The rules were simple, and the clock was ticking, but I still did not have all the prizes. So as the kids worked on the essays in the classroom with teachers, in the writing lab, and at home, I was out talking with the business community,

letting them know what was going on and how they could become involved with the students.

Everyone was excited about what was going on at the school, but not everyone was in a position to help. Those who could help provided us with enough prizes so that everyone who submitted an essay won a prize. The prizes included trips to Catalina and Palm Springs, gift certificates for free food, merchandise, and music, as well as dinners for two to some of the best restaurants around, American League Baseball tickets, and subscriptions to *Portable 100* magazine. Alas, the sports superstars were all booked and unable to attend but promised a future appearance.

The judging was in the vein of "Funniest Home Videos" in that the three judges selected the top five finalists. Then these five were sent out in random order for all of the business sponsors to rate, so the people paying the fare selected the winners. The winners were presented their prizes in an assembly in

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the lunch area in front of 1500 of their peers. The band and the drill team were there with all the VIP's from the school. It was a very exciting event.

Tandy 102 by Eileen Guzman

This is about the Tandy 102 computer and how it has helped me in life. The Tandy 102 computer has been a real experience for me during my sophomore year here at Alhambra High.

I was really excited when we had first got the Tandys. I was also surprised at

how fast I learned about the Tandy 102, and that my typing had been better than ever before. I got so used to typing that I hardly use pencils or pens to do my assignments. When I use the Tandy for my assignments, I get compliments on how my work comes out so neat.

How the Tandy Model 102 Improved My Life by Lupe Alejandre

HELLO! I am a sophomore at Alhambra High School.

I had a choice of which high school I could attend. I'm glad I chose Alhambra because by attending I have been given the opportunity to use the Tandy Model 102.

I really appreciate being chosen to participate in this program at school. This gives me a chance to improve myself and get computer experience to enhance my learning capabilities.

Since I've been using my Tandy Model 102, I have found it easier to understand my studies.

The Tandy Model 102 has helped me to understand my studies easier because it has made learning fun, by omitting the boring use of a paper and pencil. It

makes it more interesting to want to learn.

For instance, my notes are always at the push of a button. When I need to look up a definition I've got them stored in the memory of my Tandy Model 102.

All the information I need is at my fingertips, such as my writing center and my poetry project thanks to my Tandy Model 102.

By my daily use of the Tandy Model 102, I've already begun working on my career goal, by typing information in and looking it up. My career goal is to be a court reporter.

This experience is showing me day-to-day responsibility in the use and care of a computer. A computer is a delicate machine and mustn't be abused.

Fourth Place

Fifth Place

The Tandy has also given me ideas about getting closer to new opportunities, maybe going into computer business, or maybe getting a job with computers where I would like to work, in a police station or school district.

By getting the opportunities to be in this special Tandy class, I have met a really nice teacher and a lot of new friends.

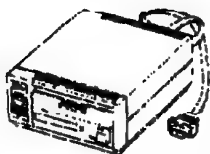
But, wait, there are more things about the Tandy and how it has helped me. The Tandy is also very easy to carry. It comes with a guide book, other attachments, and a neat carrying case. One important rule it has taught me is more about responsibility, because the Tandy is no toy to play with. Another thing about the Tandy is you can type anything you'd like on it, save it, and then if you don't want it anymore, you can delete it out, or erase.

My parents, on the other hand, have been really supporting me on using the Tandy computer. They love to use it too. And when they want to learn about it, they ask me, not a teacher or a friend. They're really proud of me, because of my ability to want to learn, graduate, and start my career.

That's what I've learned being in the Tandy class. It's fun, very easy to learn, and I hope more and more students learn about it.



PC-PDD



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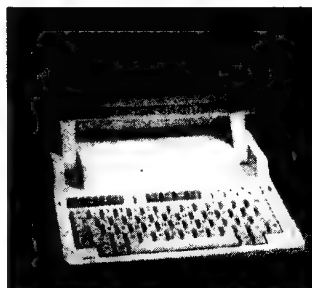
Raising self-esteem is great. Motivating students to do better is exciting. But one of the biggest benefits of this program is that students who could have dropped out of high school are now considering college as a viable option. The world of tomorrow will evolve around technology. This program gets that technology into the hands of students twenty-four hours a day, seven days a week, not just in a room full of machines that they get to use a few times a year.

As you read through these essays, consider that we lose 30 percent of such students a year from our high schools. This particular group did not lose *any!*

One benefit is that students who might have dropped out are now looking at college.

For more information, you can call Alhambra High School at (818)308-2246. Ask for Pat Pitts for additional information or to schedule a visit to the campus.

After being injured in an auto accident in 1985, Micheal Murphy underwent retraining through the Adult Education Department, a group from which he says Radio Shack has hired about 40 people so far. This 6-year Radio Shack veteran says his involvement with the student program is his way of returning the favor.



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COMPATIBILITY:

All computers having BASIC.

AREA.BA

Okay, if it's 5:32 here, what time is it in Massachusetts?

by Kent Peterson

If we lived in a technologically simpler time, I wouldn't need this program. However I've chosen to surround myself with machines of varying complexity, and lately I've been getting messages like this on my phone mail system:

"Hi Kent, it's Bob. I'll be at the office till five.

Give me a call at (619)555-1234."

I always get messages like these at five-thirty and the same questions always spring to mind:

- 1) Which of the 14 Bob's I know is this one?
- 2) Is it after five where he's at?
- 3) Do I owe this guy money?
- 4) Does he owe me money?

In order to resolve the first two questions, I usually have to figure out where in the country is area code 619 and what time it is there. Once I get that information, I'm in a much better position to figure out which Bob this is and calculate my financial relationship to him. Once that's done, I can decide if I really want to return his call.

Line 540 sets the world's crudest error trap.

Unfortunately, my phone book isn't sorted by area codes, and besides, I can never find the darn book anyway. Hey ... this looks like a job for a program. ... Yeah, that's it. A program to look up area codes. It could tell me what state the guy is calling from and also calculate the local time wherever that happens to be. What the heck, I could also index this info by state or city. Yeah ...

Thus, AREA was born. From a technical standpoint, AREA.BA (Listing 1) is about as simple as a program can get and still be useful. Line 10 sets L to your local time zone. If you and your computer live in the Eastern Time Zone, L should be set to zero. If not change line 10 to set L to the proper value for your zone (1 if you're in Central, etc.). Line 20 prints the program name and my name so I can have at least the occasional fleeting second of fame. Lines 30-530 are all the area code data that will build character as you type them all in.

```

10 L=0:'Set this to your time zone. 0=Eastern, 1=Central, 2=Mountain, 3=Pacific
20 PRINT "Area Code Finder (c) 1991 Kent Peterson"
30 DATA "AL Alabama 205",1
40 DATA "AK Alaska 907",4
50 DATA "AZ Arizona 602",2
60 DATA "AR Arkansas 501",1
70 DATA "CA California, 209 Fresno;213 Los Angeles, 408 San Jose;415 San Francisco, 619 San Diego;707 Santa Rosa, 714 Orange;805 Bakersfield, 818 Burbank;916 Sacramento",3
80 DATA "CO Colorado, 303 Denver;719 Colorado Springs",2
90 DATA "CT Connecticut 203",0
100 DATA "DC District of Columbia 202",0
110 DATA "DE Delaware 302",0
120 DATA "FL Florida, 305 Miami;407 Orlando, 813 Tampa;904 Tallahassee",0
130 DATA "GA Georgia, 404 Atlanta;912 Savannah",0
140 DATA "HI Hawaii 808",5
150 DATA "ID Idaho 208",2
160 DATA "IL Illinois, 217 Springfield;309 Peoria, 312 Chicago;618 Alton, 815 Rockford",1
170 DATA "IN Indiana, 219 Gary;317 Indianapolis, 812 Bloomington",0
180 DATA "IA Iowa, 319 Dubuque;515 Des Moines, 712 Sioux City",1
190 DATA "KS Kansas, 316 Wichita;913 Topeka",1
200 DATA "KY Kentucky, 502 Louisville;606 Lexington",0
210 DATA "LA Louisiana, 504 New Orleans;318 Shreveport",1
220 DATA "ME Maine 207",0
230 DATA "MD Maryland 201",0
240 DATA "MA Massachusetts, 413 Springfield;508 Nantucket, 617 Boston",0

```

Continued.

Listing 1. AREA.BA runs on any computer with BASIC, including all the Tandy laptop and notebook computers.

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Putting programs on an Option Rom provides greater security for your programs, will often increase program speed, and will allow you to make better use of your programs memory for storing data rather than programs. Ideal for business, Police, and data collection applications. We provide a complete range of products and services to help you get the most from your laptop computer. Call us for:

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PROGRAMMING

Line 540 sets the world's crudest error trap. Line 550 asks what you want to look up. Line 560 does the actual search. The search is case sensitive. It will find "214" and "TX" and "Texas" and "Dallas" but not "tx" or "texas" or "dallas." Lines 570-640 format the data and display it. If the program can't find any data to match your search string or has any other problems, it will simply tell you that the string was not found and end.

AREA has a problem calculating the correct time for states that lie in more than one area code. Most states, like California, fall entirely within one area code and AREA works fine for them. A few states, like South Dakota, span two time zones and the time AREA tells you may be off for the particular city you are calling. In general, AREA should give you the correct time, and even if it's off, it should be off by only an hour.

AREA will work on any of the Kyocera portables including the Tandy 100, 102 and 200 as well as the Olivetti M-10 and the NEC. If you change the CHR\$(10) to CHR\$(32) in line 570, AREA will work fine on your MS-DOS machine. I compiled it with MicroSoft's QuickBASIC 4.5, but it should work under GW-BASIC as well.



```
250 DATA "MI Michigan, 313 Detroit;517 Lansing, 616 Grand Rapids;906 Escanaba",0
260 DATA "MN Minnesota, 218 Duluth, 612 Minneapolis / St. Paul, 507 Rochester",1
270 DATA "MS Mississippi 601",1
280 DATA "MO Missouri, 314 St. Louis;417 Springfield, 816 St. Joseph",1
290 DATA "MT Montana 406",2
300 DATA "NE Nebraska, 402 Omaha;308 North Platte",1
310 DATA "NV Nevada 702",3
320 DATA "NH New Hampshire 603",0
330 DATA "NJ New Jersey, 201 Newark;609 Atlantic City",0
340 DATA "NM New Mexico 505",2
350 DATA "NY New York, 212 718 New York City, 315 Syracuse;518 Albany, 607 Binghamton;716 Rochester, 914 White Plains",0
360 DATA "NC North Carolina, 704 Charlotte;919 Raleigh",0
370 DATA "ND North Dakota 701",1
380 DATA "OH Ohio, 216 Cleveland;419 Toledo, 513 Cincinnati;614 Columbus",0
390 DATA "OK Oklahoma, 405 Oklahoma City;918 Tulsa",1
400 DATA "OR Oregon 503",3
410 DATA "PA Pennsylvania, 215 Philadelphia;412 Pittsburgh, 717 Harrisburg;814 Erie",0
420 DATA "RI Rhode Island 401",0
430 DATA "SC South Carolina 803",0
440 DATA "SD South Dakota 605",1
450 DATA "TN Tennessee, 615 Nashville;90
```

```
1 Memphis",1
460 DATA "TX Texas, 214 Dallas;409 Galveston, 512 Austin;713 Houston, 806 Amarillo;817 Fort Worth, 903 Marshall;915 Abilene",1
470 DATA "UT Utah 801",2
480 DATA "VT Vermont 802",0
490 DATA "VA Virginia, 703 Roanoke;804 Richmond",0
500 DATA "WA Washington, 206 Seattle;509 Walla Walla",3
510 DATA "WV West Virginia 304",0
520 DATA "WI Wisconsin, 414 Milwaukee;608 Madison, 715 Wausau",1
530 DATA "WY Wyoming 307",2
540 ON ERROR GOTO 650
550 INPUT "Look for ";S$
560 READ I$,Z:IF INSTR(1,I$,S$)=0 THEN 560
570 I=INSTR(1,I$,""):IF I THEN MID$(I$,I,2)=CHR$(13)+CHR$(1):GOTO 570
580 I=INSTR(1,I$,";"):IF I THEN MID$(I$,1,1)=CHR$(9):GOTO 580
590 PRINT I$:H=VAL(LEFT$(TIME$,2)):P$="AM":H=H-2+L:IF H<0 THEN H=H+24
600 IF H>24 THEN H=H-24
610 IF H>12 THEN H=H-12:P$="PM"
620 IF H=12 THEN P$="PM"
630 IF H=0 THEN H=12
640 PRINT STR$(H)+MID$(TIME$,3,3)+" "+P$:END
650 PRINT "Not Found":END
```

End of listing.

COMPATIBILITY: All MS-DOS computers.

A Star in Your Portable: WordStar

A full-featured word processor that runs on a single-drive portable.

by Terry Kepner

It's a sad, but true, fact that software never gets any smaller. Every time a software upgrade is announced, it requires more disk space and more RAM. For example, *Microsoft Word*, *WordPerfect*, and *WordStar* all used to run on 360K, 5.25-inch single-drive computers. Today, those programs arrive on five or more 720K, 3.5-inch diskettes, and the companies' PR people will tell you that you must have a hard disk drive to use them. All, that is, except *WordStar*.

If you have a single-drive 1100FD, or even a dual-drive 1400 series portable, trying to stay with your word processor through upgrade after upgrade can be frustrating. What used to work just fine, now gives you "DISK FULL" or "OUT OF MEMORY" errors. All, that is, except *WordStar*.

Not everyone wants or needs a harddrive-equipped portable. And, certainly, not everyone can afford those long-on-price-but-short-on-battery-life heavyweights. For these people, the 1100FD and 1400 series are just fine. The only problem is in finding powerful software that still functions with non-hard drive equipped portables. *WordStar* does.

WHAT'S WORDSTAR?

For those of you who do not know, *WordStar* was the first word processor for microcomputers, way back in 1979 when disk drives were all of 90K in capacity. Back then, it fit on one disk and offered complete control of your document with easy editing features. Its main shortfalls were its many control key commands and voluminous embedded commands.

Today, it delivers the same total control and ease of editing, but with many

new features that make it simple and a real powerhouse for wordsmiths. And it can still fit on just one disk (albeit a 3.5-inch, 720K disk).

Trying to list all the features of *WordStar* would take the rest of this magazine, so instead I'll just briefly give you the lowdown on what you can expect.

WordStar gives you both pulldown menus (like *DeskMate*), and control-key commands. If you want, you can do everything from the pulldown menus and ignore the control keys, function keys, and other commands. If you have a

It can still fit on just one disk.

portable mouse (like the new Microsoft Ball-point), you'll forget the control keys even exist, and you'll never miss them.

On the other hand, if you prefer to touch type or don't like using a mouse when trying to write, the *WordStar*'s extended function keys (with *SHIFT*, *CTRL*, and *ALT* variations) simplify your work and let you select centering, bold-face, find/replace, copy text, and thirty-six other commands with a one- or two-key combination.

The best part about these function keys is that you can change their definitions to any legal set of *WordStar* commands. So, if you want to change *SHIFT-*

F2 from *Center Text* to *Change Right Margin*, you can. You can even change all the function key definitions to match the original twenty definitions used in the venerable *WordStar* 3.3 of 1982.

The control key gives you access to four menus of commands: *Onscreen Formatting*, *Block & Save*, *Print Controls*, and *Quick Functions*. These menus let you control all the margins; paragraph formats; justification; file save, load, rename, copy, delete, and merge options; open a secondary text window; manipulate blocks of text and columns; control the cursor; set character formats and fonts; change printers; maneuver quickly through your document; find and replace text; call up the thesaurus; and call up the dictionary either to check a word or the rest of the document after the cursor. All that, without having to memorize more than four keys.

MACROS

I've skipped a lot of commands in those menus, but in them you can do practically everything and anything with regards to manipulating and controlling your document, including defining shorthand macros. Macros let you assign a whole task of operations to a single key combination.

As an example, you could define the *ESC-A* combination to search for the first occurrence of *<ITA>*, delete it, select text to the next *<ITA>*, set the text to italics, select the second *<ITA>*, delete it, and then repeat that process until all the *<ITA>*'s are gone. Then, when the next article arrives at your magazine, simply hit your selected key combination and watch as *WordStar* automatically scans the text and sets to italic all the phrases that your author specified.

As you may have noticed above,

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WordStar includes a 100,00-word dictionary (as well as acting as a spelling checker, the dictionary can also give you definitions) and a 100,000-word thesaurus. It also includes a hyphenation dictionary. All three can be turned off and ignored. And unlike some word-processor spelling checkers that give you "OUT OF MEMORY" errors with large files, *WordStar* can spell check files as big as your disks allow.

In addition to all these capabilities, you can generate a table of contents, index a document, merge-print a file (merge a letter with a mailing list), edit nondocument files, and print from the keyboard as if you were using a standard typewriter. And if you want to print a series of documents, one after the other? Add to the end of each file .fi and the name of the next file in the series. When you start printing, *WordStar* chains the files into one long document for you.

Finally, *WordStar* has dot commands. Almost everything you can set from the menus and function keys can be set with commands embedded in your document. This makes it a simple matter to design several custom sets of document styles. Simply set up a batch of boilerplate documents with dot commands and you're in business.

Load the file and look at the commands on the display to tell you rapidly and accurately if you have the right file before you invest any time in writing. You won't have to go hunting through four layers of menus to make sure that your margins are correct for what you want to do. You can even have *WordStar* automatically insert the correct dot command when you select an option from one of the menus (i.e., choosing *Center Line* from a menu automatically puts the dot command .oc in your text).

Three Model 100 Books!

☆ **The Model 100 Program Book** by Terry Kepner and David Huntress. 51 useful BASIC programs for home, office, and education: bar graph, depreciation, annuity, pie chart, forms creation, invaders game, memory scan, touch typing tutor and many others—\$19.95.

☆ **60 Business Applications Programs** for the TRS-80 Model 100 Computer by Terry Kepner and Mark Robinson. 60 powerful programs for interest calculations, annuities, depreciation, invoices, breakeven sales analysis, and more—\$21.95.

☆ **Inside the Model 100** by Carl Oppedahl "...an excellent Guide" —New York Times. A thorough guide to the Tandy Model 100. Learn about A.L. programming; disassembled ROM routines; keyboard scanning; UART, RS-232C, and modem; Clock/calendar chip; Interrupt handling; 8085 instruction set—\$24.95.

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ENDLESSLY VERSATILE

One of *WordStar*'s best features, and most tedious, is that you can redefine almost everything. I've already mentioned the function keys, but in addition to them you can change any of the defaults in *WordStar*. For example, you can have the program start with pulldown menus, or stay with the old-fashioned command-key menus. If you choose the command-key menus, you can have the menus appear all the time, only when you press the command-key, or not at all.

WordStar can spell check files as big as your disks allow.

You can even control whether the function-key definitions appear on the bottom two lines of your display.

Everything is like that: line justification, margin settings, page length, disk locations of the dictionaries, even which files appear in *WordStar*'s directory listing. While installing *WordStar* takes only fifteen minutes, customizing it takes hours as you discover things to change, change them, and then find more things to change.

This can be quite intimidating to a beginner. But once they are set, you never have to bother with them again. This is quite an advantage compared to other word processors, where what you get you are stuck with. If you don't like

SOFTWARE REVIEW

their cursor, too bad. Don't need that command assigned to that function key? Tough luck. *WordStar*, on the other hand, lets you customize it until it meets your requirements.

INSTALLING IT

WordStar Laptop Collection comes on seven 3.5-inch 720K disks. Two of the disks, Quickstart and Tutor, are ready to run. The other five contain compressed files and require that you decompress the files as you access them. *COPYWS* moves the files for you, if you know which ones you want beforehand. Otherwise, *WSETUP* installs everything for you automatically as you answer a variety of prompts.

The Quickstart disk lets you get right to work without any special procedures, simply put it in drive A and type *WS*. Quickstart, because it is all on one disk, has the thesaurus and definitions portion of the dictionary disabled, and assumes you have an HP laserjet printer. To change these settings requires a second disk drive and your running either the *WSETUP* program or the *WSINSTALL* program for changing *WordStar*. If you have an 1100FD with no access to a two-drive computer, try the file copy method described below (under "THE SINGLE DRIVE SOLUTION").

MAKING IT ALL FIT

As you may have guessed, packing all that power into one program takes quite a bit of disk space. It actually takes about 1.5 megabytes when you have all the dictionary, hyphenation, and thesaurus files together. How do you use this with

PRODUCT SPECIFICATIONS & SUPPLIERS

WordStar Laptop Collection—\$89.95

A powerful, flexible word processor for MS-DOS portable computers. *WordStar Laptop Collection* is the complete *WordStar 6.0* package except it does not contain *Star-Exchange* (for translating files between word processors), *Inset* (for inserting graphics into your document), *PC-Outline* (an outliner), and *Pro-Finder* (a directory management program).

It includes *Laplink* (computer-to-computer linking software) and *On-Time* (appointment manager calendar program).

WordStar International Inc.
201 Alameda del Prado
Novato, CA 94949

SOFTWARE REVIEW

a dual-drive computer like the 1400?

It's really not that hard, but you do have to put up with some diskswapping. Fortunately, the 1400's 128K RAMdisk comes to the rescue. You can either put all of WordStar's files on your disks and use the RAMdisk for your documents (and then copy the files to a regular disk when you are finished), or you can transfer the thesaurus program to the RAMdisk and use the extra space on your drive B disk for your files. Admittedly, this doesn't give you a lot of room, but 128K of RAM is about 100 pages of double-spaced text.

If you are working on a book, you can easily divide it up into chapters and use the .fi command to chain the finished chapters together for final printing. And when you are printing, you don't need your dictionary files on drive B, so you can use an entire disk for the documents.

THE SINGLE DRIVE SOLUTION

Running WordStar on a one-drive system is a bit trickier, but it can be done. One of the beauties of WordStar is that it can operate in as little as 384K of RAM. WordStar even has a Status command that reports how much memory is currently consumed by WordStar and the dictionary programs, and how much is not being used at all.

Set up VDISK on your Tandy 1100FD (in your AUTOEXEC.BAT file) to create a 100K RAMdisk, and copy your document files to and from a data disk as you use WordStar, as with the 1400's 128K RAMdisk. To get full use of WordStar's abilities, set up three work disks, one as the standard Quickstart disk, and the other two to give you full access to the thesaurus

You can redefine everything.

and definitions dictionaries.

When you need either of the other dictionaries, put in the appropriate disk and call up that function (WordStar and its main overlays must remain on all the disks, unfortunately). It's a trifle clumsy, but it does work. And it's lots cheaper than buying an expensive hard-drive computer with only one quarter the battery life of the 1100FD.

A word of warning: COPYWS and WSETUP do not work with a single drive; you must have more than one drive on your computer. Do not try COPYWS A: A:, you will wipe out your WordStar distribution disks. The simplest way around this is to set up VDISK as a 300K RAMdisk and copy your files there before transferring them to a diskette. Tedious, but it works.

IN SUMMARY

I started with WordStar back when it first came out, and I moved on to other word processors when I outgrew its capabilities. I've been unhappy with these other programs for many reasons, but usually because they stuck me with structures I did not like.

The most important feature of any program I use is how well it fits in with what I need done. I will, and have, put up with programs I detest simply because they will do a required job.

Now I've come full circle and have returned to using WordStar. It has everything I want and need in a word processor, yet it is flexible and adaptable to my requirements. If there is an aspect I want to change, WordStar lets me change it. That's the way a program should work. And it's every bit as good as its competition: I know; I've used them.

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COMPATIBILITY: 1100 FD and all MS-DOS computers..

A Most Favored Trade Status

Swap your 1100 FD roles between field computer and desktop with the EXPORT T external hard drive.

by Paul Globman

In today's world of notebook computing, low cost and high power computers are in great demand. Unfortunately, you do not readily find high power at low cost, so you may need a careful examination of your needs. For most people, the most significant factor regarding cost and power is likely to be a built-in 20- or 40-megabyte hard disk.

If you select a laptop/notebook computer with a built-in hard disk, you increase the computing power by having the hardware that supports the powerful software products available. But you also increase the price of the computer, as well as its size and weight, and you will reduce the battery's work time.

I do not have an MS-DOS desktop computer. My only PC is a notebook computer, which I selected for its small footprint and light weight. However, when my notebook is desk bound, I can get all the computing power of a desktop by connecting a 44-megabyte external hard disk, a mouse, and software I could not use (and would not need) when taking notes or entering data, in the field.

The particular external hard disk model I am using is the Export 40T by Systems Peripherals Consultants of San Diego. This product conveniently plugs into the parallel printer port of any computer (laptop or desktop). So not only do I get to add 44 Mb of mass storage to my notebook, I can also transport the hard disk between sites for moving large amounts of data/programs between computers.

To order the unit you just make a phone call (they accept credit card orders). A brief conversation with SPC will help you decide which of their available models is best for you (SPC offers EXPORT T, EXPORT S, and QUICKBRICK models, in a wide range of storage capacities). I was pleasantly surprised at how quickly they ship. I received the

disk drive just a few days later.

SPC provides everything you need to connect the disk drive to your computer, including power supply, parallel port adapter, cables, and an easy-to-follow installation procedure. Actually, the installation was so intuitive that I installed the unit without reading the instructions (well, I did peek at the "quick installation" steps just to confirm my assumptions).

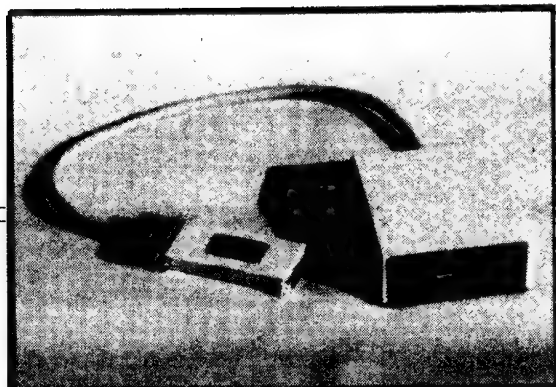
All you do is plug the adapter into the computer's printer port. You then plug the hard disk (and printer) into the adapter. Connect the power supply to the disk, and you're done. I could not imagine it being any easier.

**I could not
imagine it being
any easier.**

THE WORKS

Making it all work was equally easy. SPC provides a floppy disk with an `INSTALL.EXE` program that simplifies the software installation. `INSTALL.EXE` modifies your `CONFIG.SYS` and `AUTOEXEC.BAT` files so the next time you boot up, the hard disk drivers are installed into your DOS. If you do not currently have an `AUTOEXEC.BAT` or `CONFIG.SYS` file, then the `INSTALL` program creates one.

Once the `INSTALL` program has finished and the computer rebooted, any further reference to `C:\`, then, accesses the hard disk.



The Export "T" attaches directly to the printer port.

With the SPC external hard disk installed, your laptop operates just like any other computer with a hard disk. Any software designed to use an internal hard disk causes your newly configured DOS to access the EXPORT T via the printer port. The printer continues to function normally, and there is no discernable difference in operation, between a laptop with built-in hard disk and a laptop with the EXPORT T connected.

Disk access is very fast (28 ms) but accessing the disk through the parallel port is slower than accessing the disk connected via the system bus. Disk cache software is provided to speed things up. I have no complaints about access time to the external hard disk, but I will point out that a 12-MHz computer loads its program faster than a 4.77-MHz computer. The difference is not noticeable unless the software is quite voluminous.

Overall, I give the EXPORT T high marks for functionality and performance. I had no disk errors or problems of any kind during the evaluation period. Installation was easy and the hard disk becomes a transparent part of your system. To transfer large databases between systems, this sure beats using dozens of floppies.

EXPORTING THE 1100 FD

To provide "added value" to our readers, Nuge asked me to focus the operation details of this review on the popular Tandy 1100 FD. Since the 1100 FD is the only (currently produced)

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Circle 81 on reader service card.

Tandy MS-DOS laptop without an internal hard disk, it would be the perfect candidate for the addition of the EXPORT T hard disk system.

When you boot the 1100 FD, DOS recognizes an internal ROM drive as C. To retain the ROM drive as C and add the EXPORT T as D, just follow this procedure:

- Format a fresh system disk with the *FORMAT/S* command.
- Insert the floppy disk that comes with the hard drive.
- Run the hard disk *INSTALL* program.
- Specify the target installation disk to be *FLOPPY*.
- Swap disks as requested by the *INSTALL* program.

You now have a bootable floppy disk for your 1100 FD. When you boot with this floppy in A drive, the boot sequence will install the hard disk drivers and include access to D. To set up *DeskMate* to run from hard disk, follow this procedure (note the included "conversation" with DOS):

- Type the following to make a directory *D:\DESKMATE*
 A:>D:
 D:>MD DESKMATE
 D:>CD DESKMATE
- Copy all files from BOTH *DeskMate* disks into *D:\DESKMATE*. Place first *DeskMate* floppy into drive A:
 D:>COPY A:*.*
- Place second *DeskMate* floppy into drive A:
 D:>COPY A:*.*

Don't bother overwriting duplicate files.

Always enter *DeskMate* from the *\DESKMATE* directory so it can find its

support files. *DESK.COM* is in C drive and need not be copied to D. After moving to the *DeskMate* directory in D, just type *C:DESK* and press *ENTER*.

You may wish to have *DESKMATE* execute on system boot, in which case your *AUTOEXEC.BAT* file may look like this:

```
@ECHO OFF
PROMPT $PSG
PATH=D:\;D:\DESKMATE;D
:\DOS;D:\TSCSI
D:
CD DESKMATE
C:DESK
```

To transfer large databases, this sure beats using dozens of floppies.

It may also be desirable to copy the MS-DOS/GW-BASIC floppy onto the hard disk. Proceed as follows:

```
A:>\>D:
D:>\>MD DOS
D:>\>CD DOS
Make sure the MS-DOS/GW-BASIC disk is in drive A.
```

D:\DOS>COPY A:*.*

You now have all the software that came with the 1100 FD, installed on the hard disk. The first two *DeskMate* disks will be in the *DESKMATE* directory, and the MS-DOS disk will be in the DOS directory.

Once you begin working with *Desk-*

Mate and the hard disk, you will notice how quickly it finds program files, data files, and help files. The speed of the hard disk, the massive disk storage capacity, the ability to use software that *REQUIRES* a hard disk, all this will make your 1100 FD the powerhouse you wished it would be.

When you go out into the field, you leave the weight and bulk at home. The *DeskMate* word processor is in ROM for quick note taking, and the built-in floppy for storage makes the portability of the 1100 FD a major asset. When you get back to your desk, the SPC external hard disk provides the power of an equivalent desktop. You get the best of both worlds!

ACKNOWLEDGEMENT

A special thanks to the Tandy Computer Center in Lauderdale Lakes, Florida, for allowing me the use of a Tandy 1100 FD laptop for this evaluation.

Paul can be reached by modem on CompuServe (72227,1661) and GENie (P.GLOMBAN), or by mail at 9406 N.W. 48th St., Sunrise, FL 33351 (please enclose SASE if you're requesting a reply).

PRODUCT SPECIFICATIONS & SUPPLIERS

EXPORT-T—\$795

44-Mb external hard drive
 Power supply
 Cables
 Adapter
 Software

Systems Peripherals Consultants
 7950 Silverton Ave., #107
 San Diego, CA 92126
 (619)693-8611

COMPATIBILITY: All MS-DOS computers.

Lawyer in a Box, Is It Possible?

Take care of everyday legal problems with Home Lawyer.

by Bob Liddil

The old joke goes, "What's the only thing more expensive than having sextuplets in the freshman class at Yale? The answer is, fifteen minutes with my lawyer!" This is slightly exaggerated but generally true. Lawyers do cost an arm and a leg. Then again, maybe not.

Recently, while haunting my local Radio Shack store, here in rural New Hampshire, tucked in amongst the games and other software, I discovered an attractive tan box with a photo of a well dressed attorney on the front, entitled *Home Lawyer*. Lawyer in a box? No way! The package information said, "Why do you need *Home Lawyer*?" Then it convincingly offered an explanation. Now that I have it, I cannot imagine how I did without it!

All I needed to get started was a minimum of a PC, XT, AT, or PS/2 with at least 256K of RAM. My 1400FD or HD or any other Tandy MS-DOS portable could handle the job. But let's not get too techy, except to say that if your computer falls into any variation of the above, it should run. Let me tell you a little about the program and what it does.

Home Lawyer combines the expertise of legal counsel with the simplicity of a computer-aided education session in which there are no wrong answers. By typing the letters HL on a computer that has had *Home Lawyer* installed, the user quickly comes into contact with useful, easy-to-handle and informative pull-down menus that grant him access to 16 necessary legal documents that you can use in everyday life.

It is my practice, as a reviewer, never to crack the instruction book on a new product until there is no other hope of learning to run the program. This tells me how the program works in the hands of someone too busy or too new to com-

puters to mess around with a lot of complex commands. In the case of *Home Lawyer*, I got a little preview of its ease of operation by typing the word *INSTALL* and letting the software do the rest. Soon, everything was automatically up and running. From this point on, access was a matter of two letters (HL).

The legal documents available on *Home Lawyer* include the following:

Last Will and Testament-Husband and Wife—Something every married household should not be without; this is a simple will for married people.

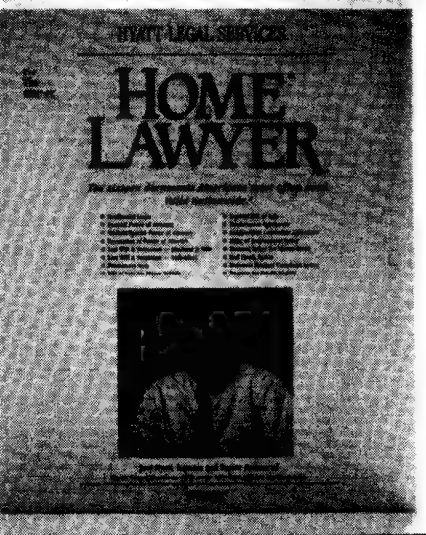
Last Will and Testament-Individual—A simple will for single, widowed or divorced people. It is a fact that far too few individuals ever even attempt to set down their wishes concerning the disbursing of personal property after death. We don't want even to think about it.

General Power of Attorney—allows

**Now that I have it,
I cannot imagine
how I did
without it!**

one person (the principal party) to grant another person broad and sweeping powers regarding the handling of the personal affairs of the former (the principal).

Medical/Special Power of Attorney—The same as above, except that it concentrates on some specific area of concern. A



good example of using this document would be to grant little Johnny's scoutmaster the authority to authorize emergency medical treatment while on a mountain camping trip.

Revocation of Power of Attorney—revokes a previously executed Power of Attorney.

Residential Lease—is appropriate for most residential leasing situations. Among its features: up to four tenants, but there is no provision made for security deposits, as state laws vary widely in their requirements.

Promissory Note—obliges one party (the maker) to pay money to another (the payee). Much more binding than the usual IOU we normally just jot down.

Bill of Sale for Motor Vehicle—Wouldn't it be nice to have this at one's disposal for a Saturday afternoon pickup truck purchase?

SOFTWARE REVIEW

General Bill of Sale—can be used to sell that old 286 portable to get funds to buy a 386. Contains an "as is" clause to put off people who are never satisfied.

Employment Agreement—an agreement for one to be employed by a business or organization, spelling out rights and responsibilities of both parties.

Independent Contractor Agreement—an agreement for one person to serve as an independent contractor or consultant for a business or organization.

Special Letters—section that offers a group of correspondence that might be useful to individuals or small business. They are pretty much self-explanatory: *Offer of Employment, Demand for Money Owed, Bad Check Notice, Request for Credit Report, and Defective Product Complaint*. You can see that these might all be useful at one time or another.

You simply fill in the blanks.

EASE OF USE

Using *Home Lawyer* is about as easy as brewing coffee! The master menu offers arrow key scrolling, and when you choose a particular section to go into, an instruction table on the right of the screen displays what you need to know about that particular document. So choosing *General Bill of Sale* in the scrolling menu brings up the words *Document for transferring ownership of personal property* on the right side of the menu display. Neat, clean, simple.

The whole program is like this. Whatever the routine constructing the document needs to know, i.e., name, address, city, state, personal or property information, etc., it will ask. The user merely fills in the blanks. The result is a slick, professional looking document that looks like Lawyer Jones' secretary just typed it up. Now, to give you an idea of how easy this all is, I discovered all this information by following the prompts on each document, before ever opening the instruction book!

By the way, I finally did read the excellent 200-odd page book that comes with the software. Even knowing how to run the program, as I do, I found it to be very informative and useful.

Do I like *Home Lawyer*? Oh, yes, indeed I do. It solved several problems, for me, during the review time, of a personal legal nature and though it cannot take the place of an actual attorney, where more complex issues are concerned, it does a fine job of providing simple, everyday legal documents that Joe Average might find useful.



Product Specifications & Suppliers

Home Lawyer—\$99.95

Sixteen legal-forms you can fill out with your computer. PC, XT, AT, or PS/2 with at least 256K of RAM and 3.5-inch or 5.25-inch disk drives

Available through any Tandy/Radio Shack store, Cat. No. 900-2507. *DESKMATE* version now in Quality Assurance and will be available soon.

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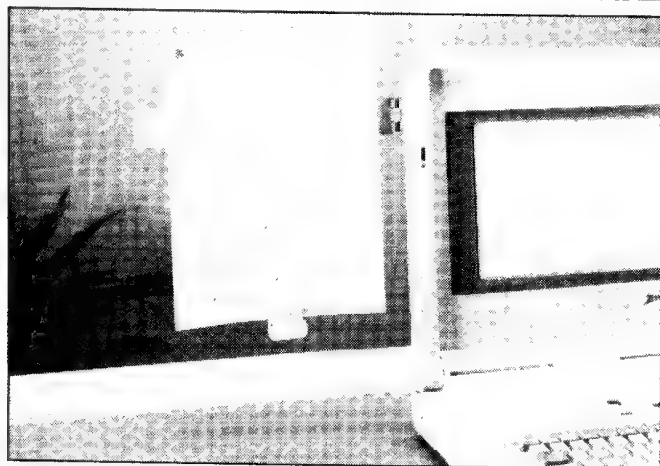
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MicroComputer Accessories' #6260 Laptop Easel Clip is designed to cling to a portable.

MicroComputer Accessories Products

MicroComputer Accessories, Inc., has introduced its 6000 series of 14 personal computer accessories. Among these new products are a copyholder designed to use with portable computers, diskette files, mouse pad products, a CRT holder, keyboard drawers, CPU stands, a CRT copy easel clip, a PC tool kit, and the Cable Duck routing system.

Many of the 6000 Series products have unique design features. The models #6100 desktop and #6110 underdesk keyboard drawers

feature wrist rests that open to reveal storage compartments. The mouse tray is designed to attach to either of these keyboard drawers for improved use of desktop space.

For more information about the new 6000 product line, contact MicroComputer Accessories, Inc. (a Rubbermaid company), 5405 Jandy Place, P.O. Box 66911, Los Angeles, CA 90066-0911 (213) 301-9400. Or circle #67 on your Reader Service Card.



The Tandy 3810HD comes with MS-DOS 5.0, DeskMate, VGA graphics, and a 60-Mb hard drive.

Radio Shack Introduces New 80386SX Notebook Computer

Radio Shack has introduced the new Tandy 3810HD business computer, its first 80386SX-based notebook PC and one of the first computers to ship with the new Microsoft MS-DOS version 5.0.

Weighing less than seven pounds (with battery), the 20 MHz 3810HD has one megabyte of standard memory (expandable to 5 Mb), one 3.5-inch, 1.44Mb floppy disk

drive, an internal 60-Mb hard disk drive with an average access time of 19 milliseconds, VGA graphics, and 84-key keyboard with true 101-key emulation, realtime clock with battery backup, bundled software, power management features, and a battery life of up to three hours.

The 3810HD's full-size fluorescent backlit display has a nonglare screen and 640 by 480 resolution

StayAround-Auto for PC Compatibles

North Shore Systems has created a PC-compatible version of StayAround, an interface that lets you run and suspend application programs and then return to the exact point in the program where you left off. The PC-compatible version is called StayAround-Auto.

StayAround-Auto permits users to save their last program before turning off their computer, then turn the computer on and come back to the place they left before the shutdown. Users press one of two key combinations to save their programs. When the AUTOEXEC.BAT

file is set up for StayAround-Auto, it loads itself and starts the program where it was before turning off the computer.

StayAround-Auto runs on PC, XT, AT, or PS/2 DOS-compatible hard disk computers and works with networks, Windows 3.0, CAD/CAM, graphics, and desktop publishing systems. It installs in minutes. List price is \$49.95. For more information, contact North Shore Systems, Inc., P.O. Box 8687, Incline Village, NV 89450. Or circle #68 on your Reader Service Card.

Portable Technology Update-on-disk

Portable Technology Update and Boston Documentation Design, Inc., are producing Portable Technology Update-on-disk, an electronic newsletter containing every work published in Portable Technology's newsletter cross-referenced by people, technology and products. In addition, subscribers can search for information by keyword, quick lookup, or full text search using logical operators AND, OR, and AND NOT. The hypertext technology implemented by Boston Documentation Design retrieves information in less than a second.

Portable Technology Update-on-disk is strong in portable products and vendors. Each disk con-

tains well over 800 vendor profiles from Altima to Zenith. A typical profile includes executives, years in business, other products offered, number of employees, and parent organization, if any.

A single issue of Portable Technology Update-on-disk is available from Portable Technology at \$125.00 and contains a full year's worth of information. An annual subscription is also available at \$395.00 and includes four issues updated quarterly. For more information, contact Portable Technology, 2961 Maiden Lane, Sarasota, FL 34231. Or circle #61 on your Reader Service Card.

with 32 gray scales. The full-size keyboard features Tandy's unique Key-Switch technology. A removable, rechargeable Nicd battery can be quick-charged in two hours with the computer turned off and in four hours while the computer is on. An AC adapter/recharger is included.

The 3810HD also has an internal slot for an optional modem and an internal socket for an optional 80387SX-20 coprocessor. Standard input/output ports include one bidirectional parallel printer port, one RS-232C serial port, and connections for an external keyboard, monitor, and disk drive.

MS-DOS 5.0 and DeskMate 3.5, Tandy's personal productivity software, are preinstalled on the 3810HD's hard disk drive. In addition to an address book, calendar, and spell checker, DeskMate includes word processing, spread-

sheet, filer, and telecommunications applications for instant, out-of-the-box computing.

Options for the 3810HD include a 1-Mb memory expansion upgrade (\$249.95), an internal 2,400 bit per second modem (\$199.95) or combination 2,400 bps modem/9,600 send fax (\$249.95), a replacement battery, an executive leather carrying case (\$99.95), or a choice of two durable cloth carrying cases (\$39.95-\$59.95).

The Tandy 3810HD has a one-year limited warranty and sells for \$3,299 at more than 7,000 participating Radio Shack computer Centers, Radio Shack technology stores and dealers nationwide. For more information, contact Radio Shack, 700 One Tandy Center, Fort Worth, TX 76102. Or circle #60 on your Reader Service Card.



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Palmtop Computer Solves Tiny Keyboard Problems

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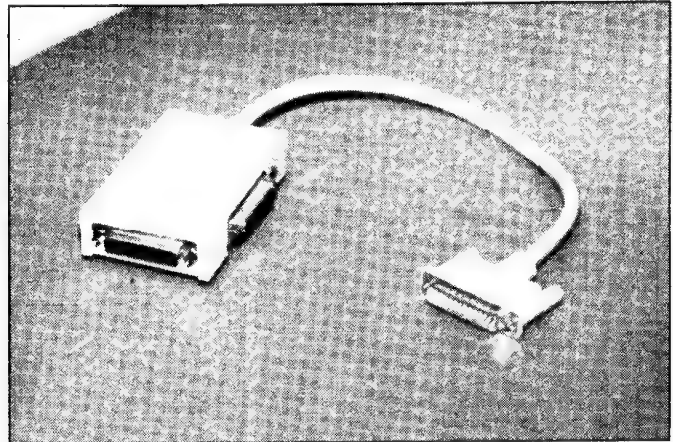
Price is \$595.00. For more information, contact Infogrip, Inc., 812 North Blvd., Baton Rouge, LA 70802. (504)336-0033. *Or circle #63 on your Reader Service Card.*

Info Select 2.0 Released

Info Select is for the users of PC's and compatibles who manage a great deal of random information: notes, appointments, things to do, addresses, phone numbers, prices, letters, policies, reference information, lists, and more. *Info Select* is considered easy to use, requiring less than 15 minutes of learning time. It is the second generation of *Tornado*, winner of two PC Magazine Editor's Choice Awards.

Info Select 2.0 provides increased database capabilities and increased support for laptops and networks, providing significant new

features. Infobases can now be search for "best fit" matches, in addition to the existing "exact match" search capability. (The new search capability is termed *Neural Searching* because, similar to the way neurons in the brain are excited by numerous dendrites, each word in the search key adds to the excitation level of each window that contains the word, and the user is presented with those that have a "close association.") The Windows (Ascending or Descending) sort key can be either a field of an *Info Select* form or can be embedded in a free-



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Price is \$179.00, and distributor, dealer, and OEM discounts apply. For more information contact American Weltec, Inc., 3520 W. Oquendo Road, Las Vegas, NV 89118 (702)798-5444. *Or circle #64 on your Reader Service Card.*

form note. Infobases can be sorted by string, number, or date. Release 2.0 adds a "remove duplicates" capability that looks for duplicate information in a merged database.

The new version of *Info Select* automatically recognizes the address portion of a window and formats it for envelope or shipping label printing. In addition to the existing time and date stamping capability, *Info Select 2.0* can now do automatic numbering of invoices, purchase orders, etc. International and other new phone number formats are now supported. Other enhancements and new features are included in the new release.

For more information, contact Micro Logic Corporation, P.O. Box 70, Dept P, Hackensack, NJ 07602 (800)342-5930 or in New Jersey (201)342-6518. *Or circle #62 on*

Disk Valet

Ricks RamStar offers a full line of Disk Valets, carriers for diskettes. Various styles offer room for diskettes, for notepads if desired; they are self-contained or have three rings to fit in binders. The company also offers valets for business cards, CD's, and audiotapes as well as a Body Shield Apron for radiation protection. Ricks RamStar also creates custom items.

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DEFUSR appears monthly to answer your questions about Tandy notebook computers.

**Send your queries to: DEFUSR, PORTABLE 100,
P.O. Box 428, Peterborough, NH 03458-0428.
Please enclose a stamped, self-addressed envelope for our reply.**

USE CHIPMUNK WITH TANDY 102?

Let it be no secret that I am trying the three of you (Purple Computing, Tri-Mike Network East, and *Portable 100*) at once, since all are linked in one way or another to my problem.

When I was a happy Model 100 owner, PCSG "hooked" me and made me feel happier by selling me Super ROM and a Purple Computing Chipmunk disk drive. I was just beginning to bask in feelings of superiority to another Model 100 enthusiast, who was suffering with lesser software and a balky first version of Tandy's disk drive, when I switched to a Tandy 102.

Super ROM continues to work fine. I praise it in particular for three weeks this fall in a consulting assignment in Sri Lanka. I used the Tandy 102 as a notepad in travels around the island. When the time came to prepare a dozen pro-forma spreadsheets for the project, even though several were very large, I did them all on the 102 with *Lucid*.

There is not an easier system to use. I could work on the numbers and formulas anywhere, adjusting where I found new information—or new critics—to play "what-if" games. The pro-formas were written partly in a hotel room, partly around Colombo, and partly while on safari in Yala Wildlife Preserve. They were easier to set up there than via Lotus on a desktop.

The directly printed results, while less elegant than *Write ROM* could produce, were good enough to go directly into my final report.

But the Chipmunk is another story. Enter the Tandy 102, exit compatibility with the Chipmunk. Call PCSG, and they no longer handle it. Call Purple Comput-

ing (as I did a year or two ago), and they have disowned it. Has anyone found a way to keep it usable with the 102?

**W.R. Dill
Foreside, ME**

Sorry to say, W.R., that Chipmunks just don't work with the Tandy 102. I wish we had a better answer. (If anyone has found a way to do it, please let us know. We'll share it with other readers.)

Tri-Mike Network East now handles Model 100/102/200 PCSG products and has Chipmunk disks, cables, and interface

The pro-formas were written while on safari in Yala Wildlife Preserve.

boards. There are tentative plans to recondition some used Chipmunk drives and offer them for sale.

-MN

A WIDGET FOR THE CASIO

Your suggestion to Frank Tuttle (DEFUSR, June '91) regarding the transfer of data from the Casio Digital Diary to the Model 100 was right on. I have the Casio model SF 9000, which has the same interface as his SF 8000, and just the day before I received the June issue I was

successful in transferring the contents of the memo mode of the Casio to my NEC 8201, using TELCOM at 9600 bps, no parity, 8-bit word, one stop bit, and no X or shift in/out control. The Casio PRINT function must be used, not TRANSMIT. The latter seems to generate different codes—only carriage returns appear to be accepted by the NEC in the TRANSMIT mode.

Frank might also be interested in a serial-to-parallel interface sold by Widget Software, Ltd., 121 London Road, Knebworth, Hertfordshire SG3 6EX, UK. The unit, called the Paralink SF, requires either a separate 5-volt regulated supply or power from pin 18 of the Centronics port of the printer. (Some printers don't provide it, Epsons, for example.) You must fully insert the mini-phone plug—it needs an extra push for the casing of the plug to slip into the recess on the Casio. It now works with my Tandy DMP-132 printer. Using character set 2 in the IBM mode, the interface provides full character printouts of the Casio SF set. For anyone who has to regularly print to a printer from the Casio, this unit looks very good.

The Paralink is only a little larger than a 25-pin D-style gender changer and is very light. It is evidently manufactured by Yellow Computing, Postfach 1136, D-7107 Bad, Friedrichshall, West Germany. Widget also supplies a similar unit, as well as other products, for the Psion Organiser. Thus, dealers in the US providing products for the Psion might also be able to supply the unit for the Casio.

**H. Francis Henderson
Rome, Italy**

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☆ **Inside the Model 100** by Carl Oppedahl "...an excellent Guide" —New York Times. A thorough guide to the Tandy Model 100. Learn about A.L. programming; disassembled ROM routines; keyboard scanning; UART, RS-232C, and modem; Clock/calendar chip, Interrupt handling, 8085 instruction set-\$24.95.

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repaired? I plugged a chip in wrong, and things just haven't been the same since!

By the way, I'm using Tandy 200's to print production labels for 500-pound bales of paper at the local mill. Any interest in an article for the magazine?

William Wallace
Brunswick, GA

Bill, to the best of my knowledge, Ultra-soft Innovations offers the only serious support for the Kyo machine. I know they offer repair service for Tandy laptops, so they can probably handle the clone machines as well. (Sorry, but I didn't actually have time to check before deadline.) See their ad in this issue for address and phone number. They also offer some very good software for the Kyo, so be sure to ask for a catalog.

As for your article idea—yes! I'm sure that what you do with the T200's could easily apply to other fields and solve problems for other readers. I've sent along our writer's guidelines to help you get started. (You other readers with good ideas, please feel free to request our guidelines, too. A stomped, self-abused envelope would be much appreciated!)

-MN

DOWNLOADING DILEMMA

I seem to have trouble connecting with your Portable 100 Bulletin Board in a way to obtain desired information. The April 1991 issue had a very interesting article, "Homebrew Model T Custom Graphics," by R.H. Pigford. Your instructions stated this program was available from the Portable 100 BBS.

I use several databases in my area in my Real Estate business. But when I try to hook onto your system, I find myself in a mish-mash of instructions and choices, none of which seems to indicate where to go for these programs which are supposedly available.

```

--* Main Menu *--
<N>ews
<M>ain Message/File Area
<J>ump to Message/File Area
<E>-Mail
<I>nformation & Help
<T>ime used
<H>elp
<G>oodbye <ESC>

```

Command:

Figure 1. The Portable 100 BBS main menu.

This is not the first time I have attempted to gain information from the P100 BBS. All have ended in my disconnecting, probably allowing the phone line to go on until it hangs up on its own.

Any help you can give me would be appreciated. I went ahead and typed in the program, but have not had the opportunity to use it yet.

Bill Brewer
Austin, TX

```

--* Jump to Message/File Area *--
<1> ---
<2>E-Mail
<3>Help & Information
<4>M100/102, 200, 600 & Compatibles
<5>MS-DOS (Tandy Computers)
<6>CP/M
<7>Macintosh
<8>TRS-80 Color Computer
<9>Ham Radio
<0>Main Message Area
<C>ombined Message Boards
<H>elp
<M>ain Menu
<P>revious <ESC>
<G>oodbye

```

Command:

Figure 2. The jump menu

As I've said before (in "GETTING WIRED", Nov. '88), "YA CAN'T HURT NOTHIN'!" by hanging up on the BBS, so don't worry. It knows when you've hung up and will prepare for the next call. Now, here's how to go about getting files.

The first menu you see when you log on is the main menu. You want to jump to a specific message/file area, so choose <J>ump to Message/File area. That calls up a list of the specific areas available. Since you want a Model T file, choose <4>M100/102, 200, 600 & Compatibles, which actually takes you into the Model T-specific area. Your choice here is <F>ile Area, which pops you into the Notebook File Transfer menu.

The first choice to make here is <P>rotocol. This need only be done once per

```

--* M100/102, 200, 600 *--
<L>eave Message
<R>ead
<Q>uickscan
<D>elete
<F>ile Area
<H>elp
<M>ain Menu
<P>revious Menu <ESC>
<G>oodbye

```

Command:

Figure 3. The Model T (M100/102, 200, 600) area.

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```
>>> Notebook File Transfer <<<

<U>pload
<D>ownload / List
<H>elp
<M>ain Menu
<P>revious Menu <ESC>
<G>oodbye

Command:
```

Figure 4. The notebook file transfer menu.

on-line session. For the Model T, your choice from the resulting list of protocols is always 1 - TYPE file to your screen.

Now, to download a file or see what's available, choose <D>ownload / List. You'd probably first want to choose <L>ist to get a listing of the name, size and description of each file available.

```
<D>ownload, <P>rotocol,
<E>xamine,
<N>ew, <H>elp, or <L>ist
Selection or <CR> to exit:
```

Figure 5. The download menu.

Obviously, the entire list won't fit on your screen—it will scroll by. There are several ways to deal with this. One way is to press P to pause the display and then any key to restart it. Another way is to press F5, which makes the word Echo appear above that key and causes everything appearing on your screen to be sent to the printer as well. (This assumes you have a printer connected and ready!) That's a good way to get a complete hardcopy listing of all the files for future reference. Pressing F5 again stops the echo to the printer.

A third way is to "capture" the list into a .DO file on your computer. Here's how. Before choosing <L>ist, press F2 (Down). Your Model T will ask you for a file name to use as your capture file. Type a name of up to six characters (no need to add a .DO extension) and press ENTER. The Down label switches to reverse video (white-on-black) to indicate that it's capturing, and the Model T creates and opens that file. Thereafter, everything coming across your screen is also being saved in the file—until such time as you press F2 again, which stops capturing, closes the file, and switches the Down label back to normal video. After you log off, you can go look at the capture file you made. It's a regular .DO file, so you can edit it, print it, save it to disk, tape, another computer, etc.

A word of caution: When creating a capture file TELCOM won't warn you if a file of that name already exists! If there is one, it will be written over and its previous contents lost. So take care not to use the name of

a .DO file already in your computer unless you're sure you want to overwrite it!

In all of the above methods—and most anywhere else on the BBS—you can discontinue the listing at any time by pressing S. (Think of P as "pause" and S as "stop.")

When the BBS completes the listing (or you cancel it by pressing S), the Notebook File Transfer menu reappears. Now that you know the name of the file you want to download, choose <D>ownload. When the BBS asks for the file name, type it in as it appeared in the list—but don't press ENTER yet! First open a capture file in your Model T as described above (F2, file name, ENTER). Having opened your capture file, you can now press ENTER once more to tell the BBS to start the download. When it's done, press F2 to close the capture file, and you're done. The Notebook File Transfer menu reappears, and you can either log off or download more files if you have sufficient free memory.

If you choose to download more files, remember to give each capture file a different name, or each download will overwrite the previous one! After logging off, edit out any stray keystrokes or extraneous characters at the beginning and end of each capture file.

Whew, what a long answer! At least I think I've left nothing to chance. If that don't get you happenin', Brewer, I'm never buying a house from you!

— MN

Select from the following transfer protocols:

- 1 - TYPE file to your screen
- 2 - ASCII with DC2/DC4 Capture
- 3 - ASCII only, no Control Codes
- 4 - XMODEM
- 5 - YMODEM/YMODEM-g
- 6 - YMODEM/YMODEM-g Batch
- 7 - SEALink
- 8 - KERMIT
- 9 - SuperKERMIT (Sliding Windows)

Choose one (Q to Quit):

Figure 6. The file transfer protocol menu.

Not Sure About A Product Or Service You've Seen Here?

You can obtain free information on products advertised in Portable 100, as well as for products mentioned in our New Products Department, by using our free Reader Service Card (elsewhere in this issue).

Below each advertisement is its associated Reader Service number. Simply note the R.S. number for those products that pique your interest, and circle the appropriate numbers on the R.S. card.

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COMPATIBILITY: Tandy 100/102; others with variations.

What's My Model T Doing with My Files?

Here's how it handles .CO files and structures .BA files.

by Mike Nugent

In the last installment of ORG.ASM (December '90—I did say "not quite monthly," remember?) we looked at Model T memory management. A key point was that although files constantly move around in RAM, the lowest one—the very first .BA file—never moves. Machine language programmers can use this fact to create programs that require less RAM and are easy to use. To understand how, let's first examine normal machine language (.CO) files.

Machine language for the Model T's 80C85 microprocessor is incapable of relative addressing—all jump, call, load, and store instructions must reference *specific* memory addresses—so an m/l program can operate properly only at its design (ORG) address. But with files constantly shuffling around in RAM, how can we predict where a file will reside at any given moment? Simple—we can't! We just can't run a .CO file wherever it happens to be. So normal .CO files are ORG'ed to run in high RAM, above all the other files.

The .CO file you see on the menu, then, is simply for low memory storage—it never actually runs. When you "run" it, the computer creates a copy of it in high RAM, at or above HIMEM, and executes the copy. At this point two copies of the .CO file exist, the stored copy in low RAM and the executing copy in high RAM. Thus, a 3K .CO file actually requires 6K to run. (Bummer!)

So while the Model T's designers have provided a way to safely store and run .CO files, there's a price. A normal .CO file, when running, eats up RAM space equivalent to twice its own size. Moreover, we must set the HIMEM pointer to the program's ORG address (or lower) before execution, to protect the running

```

8DE0 ED 8D 0A 00 8E 20 52 65 Lt / Re
8DE8 6D 61 72 6B 00 02 8E 14 mark /
8DF0 00 A3 20 22 48 69 2C 20 E "Hi,
8DF8 53 68 61 6E 6E 6F 6E 21 Shannon!
8E00 22 00 08 8E 1E 00 80 00 " / 8
8E08 00 00 19 8E 0A 00 8E 20 / /
8E10 4E 65 78 74 20 6F 6E 65 Next one

```

Figure 1. Here's how our sample .BA program looks in memory. Note that BASIC keywords are "tokenized."

program, or the computer will refuse to run it. It won't automatically set HIMEM for us, nor will it reset HIMEM afterward to return the reserved RAM to the free memory pool. That's the responsibility of the user (or the user's "loader" pro-

those who do understand it. We'd all prefer simply to cursor over a desired file name and press ENTER to run it. And that's where we can benefit from the fact that the first .BA program in RAM never moves.

M/L THE "EASY" WAY

If we could somehow park our m/l program in the lowest available RAM, where the first .BA file resides, it would be safe, never moving (meeting the 8085's non-relative rule) regardless of which other files moved around above it. And being non-.CO, the Model T needn't copy it to high RAM for execution (no need for both a "storage" copy and a "running" copy—no need to use twice the RAM). Just put the cursor on the file name and press ENTER.

But the first file must be .BA, right? Right! So how can we do it? We embed, or "pack," our m/l program inside a .BA file. We dress our m/l program in .BA clothing, so to speak. *Yeah, how?* Funny you should ask! It's simple—sort of—once you know how .BA programs are structured.

The .CO file on the menu, then, is simply for low memory storage.

gram, if one is being used).

This need to preset HIMEM and clear it afterward is one of the drawbacks of normal .CO programs. Besides being a difficult concept for non-techie users to understand and execute, it's a major pain in the [your choice of terms] even for

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Picture this. *Disk+* comes to you on a Snap-in ROM and a diskette for your desktop. You take a quarter and open the little compartment on the back of your Model 100. Then you just press the ROM into the socket. *Disk+* appears on your main menu just like a built-in.

You connect your Model 100 to your other computer using an RS232 cable (available from TMNE for only \$20).

You just place the *Disk+* diskette into the desktop's drive and turn on the computer. It powers up automatically and says "awaiting command" on your desktop's screen. Then you just put the widebar cursor on the Model 100 main menu on *Disk+* and press ENTER. You are shown your RAM files arranged just like the main menu.

To save a file to your other system's disk drive, you just move the widebar cursor to the file you want to save and press ENTER. It is saved instantly with no further action.

To look at the disk directory, you just press a function key on your Model 100. You see immediately the disk directory on your Model 100 screen, and it is arranged just like your Model 100's main menu.

To load a file from the diskette to your Model 100, you just move the widebar cursor to the file and press ENTER. The file is transferred to your Model 100's RAM instantly. You can press F8 and go back to the main menu, and the file you loaded from diskette is there, ready to use.

It is so nice to be able to keep your documents, programs (both BASIC and machine code) and *Lucid* spreadsheet files on the diskette, and bring them back when you need them. All files are ready to run or use with no changes or protocol by you.

If you have access to a desktop computer and don't have *Disk+*, then evidently we have done a poor job telling you about it.

All files and programs that you load or save, go over and come back exactly as they are supposed to be because of full error checking. This guaranteed integrity is really a comfort. *Disk+* is wonderful in so many other ways. For example, you can do a "save all" of all your RAM files with just a touch of a function key. That group of files is saved on the diskette under a single filename with a .SD (for subdirectory) extension. Any time you want, you can bring back all those files at once, or just one or two if you like, again with one-button ease.

Disk+ takes up no RAM. That's zero bytes either for storing the program or for operating overhead.

What really excites most *Disk+* users is text file cross compatibility. Your Model 100's text files are usable on your desktop computer, and your desktop's text files become Model 100 text files.

This means you can write something on your Model 100, and with *Disk+* transfer it

instantly to your desktop and start using it right away on your bigger computer. Or the way we like to work is to type in a document on the desktop computer and then transfer it to our Model 100 with *Disk+*. Then we print out the document, beautifully formatted, using WRITE ROM.

Disk+ works with just about every micro sold, from IBM PC and its clones, to all Radio Shack computers (yes, all), to Apple II, Kaypro, Epson and most CPM. Just ask us. More than likely, your computer is supported.

Incidentally, hundreds of Model 100 owners have gone to their Radio Shack stores and bought a color computer because it is so low priced, and with *Disk+* they have an inexpensive disk drive.

And if that weren't enough, how about this: *Disk+* also provides cross-compatibility between different computers like IBM, Apple or the Model 4 using the Model 100 as the intermediary device. Quite a feature!

The snap-in ROM is really great because you can use other ROMs like *Lucid* or WRITE ROM. They snap in and out as easily as an Atari game cartridge and you never lose your files in RAM.

Anyone who ever uses *Disk+* simply can't do without it. But so many times we have had new users call us and say, "Wow! I had no idea when I ordered it that *Disk+* would be so fantastic. I just couldn't believe that I could use my desktop computer's disk drive with my Model 100 just like it is another main menu."

That's why we sell *Disk+* on a thirty-day trial. If you aren't completely satisfied, return it within thirty days for a full refund. Priced at \$149.95 on Snap-in ROM. MasterCard, Visa or COD.

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.BA FILE STRUCTURE

BASIC programs in the Model T are stored in a specific format, with each line of a .BA file structured like this:

- A two-byte pointer to the first memory location following this line,
- A two-byte word containing the line number of this line,
- The actual .BA code (BASIC program statements) in this line,
- A nul (zero) byte marking the end of this line.

Note that BASIC keywords in the code, such as PRINT, REM, INPUT, MENU, etc., are stored as representative one-byte "tokens" rather than complete words. Among other advantages, this saves memory space and helps programs run faster.

Let's look at an actual .BA program in RAM. Here's our program:

```
10 REM Remark
20 PRINT "Hi, Shannon!"
30 END
```

Figure 1 is a screen dump of this program as viewed by TMN's Debug program. Each line of the figure describes a group of eight consecutive bytes of RAM, showing: the 4-digit hex address of the first byte in the group; the hex value stored in each consecutive byte; and on the right, an ASCII representation, if printable, of the value stored in each consecutive byte.

Our sample program happens to reside at address 8DE0 and looks like this:

Line 10: The first two bytes, ED 8D, point to the first memory location following the end of this .BA line. Since two-byte values are stored reverse order in the Model T, ED 8D is actually 8DED (which is where line 20 begins—ain't that sumptin'!).

The next two bytes contain the line number of this current line (A000 = 000A = 10 decimal).

The fifth byte, 8E (token for the keyword REM), begins this line's actual program code, and is followed by 20 (a space), the word Remark, and the nul byte (00) at 8DEC marking the end of the line.

Line 20: Beginning at 8DED, the first two bytes are the mandatory next-line pointer, pointing to 8E02. (Guess where line 30 starts!)

The next two bytes hold the current line number (1400 = 0014 = 20 decimal), and then comes the program code: A3

The Beginner's Guide to the WP-2

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(PRINT token), 20 (a space), the text to print ("Hi, Shannon!"), and the nul byte at 8E01 marking the end of the line.

Line 30: This begins with the next-line pointer (to 8E08), followed by the line number (001E = 30 decimal), 80 (END token—the only byte of .BA code in this line, by the way), and the end-of-line nul byte at 8E07.

End of program: Hmm... no next line! Were there another one, it would begin here at 8E08 and follow the same structure as the others. But since there are no more lines, BASIC instead places two more nuls (00 00) here as an end-of-program marker.

There it is, our complete BASIC program as seen by the Model T. So what's that stuff we see after it, beginning at 8E0A? It's the start of another program, whose first line looks like this:

```
10 REM Next one
```

and is stored in RAM in the same format as our sample program.

HOW TO USE THIS INFO

Nope. Sorry, but I'll have to hold off on this part. Space and deadline constraints strike again. Next time around, we'll start actively messing with this stuff, okay? See you then!

CHDUMP.BA is a screen dump program described in the May 1990 issue. Debug is a debugger and command line oriented assembler from Tri-Mike Network East. It's available through Granite Street Portables. See their ads in this issue.



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More Lotus, A New DeskMate

Copy Lotus spreadsheets
and view the installation of a new DeskMate.

by George Sherman

In last issue's article, I threw a lot of technical stuff at you all at once about the construction of a spreadsheet using Lotus-DM, the DeskMate version of Lotus 1-2-3 (Lotus Development Corporation, Cambridge, Mass.). Although I do want to talk further about Lotus-DM this month, I thought we might just lean back, kick off our shoes, pop the top on our favorite beverage (make mine Pepsi, thanks) and just toss a few ideas around in addition to the Lotus program.

Let's get the technical stuff out of the way first, OK?

COPYING TO OTHER SPREADSHEETS

I was only halfway through my article last time when I suddenly discovered I was running out of space and time. Because of this, I sort of scrunched the last half of my article into two brief paragraphs. No, I'm not going to do the second half of the article now, but I am going to go into a little more detail with reference to copying information from one spreadsheet to another.

To begin where I left off and to repeat myself a little, I also constructed a summary spreadsheet in which I enter the monthly totals at the close of each month. LOTUS-DM lets the user copy ranges from one spreadsheet to another either as a direct copy including the formulae, as a data copy added to the information already in the target spreadsheet, or as a data copy subtracted from information already in the target.

What I did was to set up this summary spreadsheet with the same general information as the monthly spreadsheets. I know that on my monthly spreadsheet the totals for each item are contained in row 36, or to be more exact in the cells, B36 through K36, written as B36..K36. To

transfer the necessary information, I first open up my summary spreadsheet, which I have named, RECAP91.WK1. I place the cursor in column 2 in the row labeled May.

Caution, the placement of this cursor before issuing the next command is important. When Lotus-DM copies the information from the other spreadsheet, it lays it down on the current spreadsheet to the right and below the current cell.

**My information
magically appears
on the current
spreadsheet as if I
had laboriously
typed it in.**

To avoid possible data loss from combining files incorrectly, save the current file before using this command. Now pull down the menu under File F2. Choose the command, Combine. Another word of caution here, when you use Combine, the data in the current file and the incoming data should be organized in the same way.

Activating Combine opens up the dialog box File Combine. The dialog box tells you where the current pointer, or cursor, is, and it gives you a list of spreadsheets from which to copy information.

As you choose the spreadsheet from

the Files list box, the name appears in the File: box. Next you choose from one of three possibilities in the Operation list box, Copy, Add, or Subtract. Copy copies all data including labels, data, and formulae. Add, as its name implies, adds values in a worksheet file on disk to numbers or blank cells in the current file. Subtract subtracts them.

In this case, I want to add them, so using the up and down arrows I move the cursor to Add and press the space bar to activate that option. Next using the tab key, I move down to the Size list box, marked as Entire File. Again using the up and down arrows and the space bar to activate the option, I choose Named Range. Then I manually enter the range, B36..K36. Now I press the ENTER key and VOILA! My information magically appears on the current spreadsheet as if I had laboriously typed it in.

In my recap spreadsheet I have added another column to the right, which totals the money amounts in each row. And cell L36 at the bottom of this column totals the totals. The information below the spreadsheet tells me Average cost/gal, Avg. Miles per Gal, and Avg. Cost per mile.

Just for your information, my 1986 Chrysler New Yorker with a four-cylinder engine and turbo is getting as of the end of June an average 21.1 miles per gallon. It is costing me 24 cents a mile to operate it. The average cost of premium unleaded has been \$1.18 per gallon, and I have spent a total of \$860.86 on repairs so far this year. Most of that was repairing my air conditioner.

Another spreadsheet I have in operation analyzes my city utility bills with a comparison of expenditures for 1990 and 1991. A similar spreadsheet compares my natural gas bills. Both of these spreadsheets also present a double bar graph for a visual comparison.

GRAPHS

By the way, while I'm on that subject, graphs can be either bar, stacked bar, line, or pie. If you have a color monitor you can show them in color. Graphs can also be printed for a paper record and if your printer prints in color you can do that as well. Note that the standard worksheet that comes with *DeskMate* does not provide for graphs.

One aside here with reference to the *LOTUS-DM* graphs and printing: The program called *PRINTGRAPH* is extremely memory intensive. I have to clear everything but the bare essentials out of RAM before using it, and then I have to tweak it a little. This has always struck me as strange since I routinely used a graphing program with the M100, which also prints out, and the whole operation is done within the 32K restraints of the M100. Of course, in that instance, I use a screen dump.

A NEW DESKMATE

I took delivery several months ago of Tandy's latest version of *DeskMate* version 3.05. Because of time pressures including an extended trip through the south central part of the United States (did you know that it rained for over seven straight weeks in New Orleans?), I did not get a chance to try to install it until recently.

Since I'm supposed to be the "aver-

**Now isn't that
what you would
have done?**

age user," I tried to install it into my customized setup without reading the instructions first. Now isn't that what you would have done? Some of the familiar programs and data files have had their names changed. For instance, the *Calendar* data file, formerly called *PERSONAL.CAL* is now called *PERSONAL.CLN*. Don't ask me why 'cause I don't know. It just is. If you're upgrading from an earlier version of *DeskMate*, just changing the suffix of your data file makes it work with the new *CALENDAR.PDM*.

One of the most likable characteristics about *DeskMate* is that it is so forgiving. Let me give you an example of what I

mean. As I was installing the new *DeskMate*, I tried to figure out what files had been replaced from the old version by the new version. (By the way, BEFORE I did this, I made a backup disk of my old working disk, just in case, you understand.) Then I moved the programs one by one, erasing the old ones if the names had been changed, letting the new programs overlay the old ones if they had not.

Most of the programs were larger than their predecessors, which seems to be the way of the world. So I had to delete

3.05 would not accept my prior desktop. A small matter, really.

ANOTHER SURPRISE

My next update surprise came when I tried to use *SETUP*, which is on the pull-down menu under *F10*. There was no list box for the printer. NOW—I read the instructions. It seems that that list box is available on a pull-down menu from the *SETUP* screen under *Options F2*.

There is now a new program called *DMPRTSEL.ACC* that is accessed whenever you select the printer option. I keep it on a separate disk since it is only used to change printers and/or settings. This program accessory makes changes in the *DMPD.CFG* file, another configuration file you need to keep handy.

If you remember my original customizing setup I now place this in my RAMdisk at bootup so it's always available no matter what disk I have in or which program I am running.

After I went through all of the above and finally got things perking, I looked at the new book our publisher had sent me, an update of *Getting the Most Out of DeskMate 3* by Michael A. Banks and includes version 3.05.

But I see your drink is about gone, and I'm running out of space again. Tell you what, let's meet back here, same place, same time, next month and I'll go through all the changes Tandy made in version 3.05. OK? See you then.

BY GEORGE!

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some TSR's I was using. But no big deal. Then as I tried to run *DeskMate* from the bootup, I was told the program could not find a file it needed. I located it, and moved it to my working disk and tried again.

This happened twice more before I finally got the desktop to come up. Each time *DeskMate* politely told me what file it needed, I looked it up, made it available, and we proceeded, *DeskMate* and I. My next surprise came when we finally got to the desktop. I had to rearrange it again to suit my needs. *DeskMate* ver.

**NOW—I read the
instructions.**

You can contact George on CompuServe (ID 72300,3203) or by mail, either c/o Portable 100 or directly at 1701 Clarke Street, Ponca City, OK 74601. (Please enclose SASE if requesting a reply.)

Unless otherwise stated, all quotations contained in this and future articles are from the following books:

Getting the Most Out of DeskMate 3. Michael A. Banks. A Brady book. Simon & Schuster, Inc., 15 Columbus Circle, New York, NY 10023.

The First Book of DeskMate. Jack Nimersheim. Howard W. Sams & Company, Macmillan Computer Book Publishing Division.



Getting It on Paper: Text Formatting

If you think education is expensive, try ignorance.

—Derek Bok, President of Harvard University

by Stan Wong

I'd like to dedicate this month's column to students everywhere. Computers have become essential in the educational process. When I was last in school, we learned about computers and made a career out of studying them. Today, computers are merely tools that we use to get a job done, whether in industry or in school.

My last formal education was graduate school, so I'd especially like to dedicate this column to professors and their students everywhere. To paraphrase the army recruiting theme, graduate life is not just a job, it's an indenture.

DEJA VU

So far, I've covered how to set up your printer and lay out the page format. In this third, and last, part of my "Getting It on Paper" series, I will cover a potpourri that falls loosely under the category of *text formatting*, referring to how your words appear on paper. Thus, the focus this month is on three of the WP-2 function keys: Format (F1-4), Style (F1-5), and Print (F2-5).

As I've said, the main job of writing is saying what you want to say. There's no point to having a nice looking document if it doesn't have anything useful to say. On the other hand, you can make your point more effectively by improving the appearance of your document.

ALL IN THE (FONT) FAMILY

When your words get printed on paper, your printer uses a *font*. A font is a typeface of a particular size and style. A common default font for many printers is 10-point Courier, which looks like the type on a pica typewriter. But you can alter the appearance of your text by selecting a different style, such as boldface, technically considered another font.

The text in this column is printed in 9-point Palatino font. The word *italics*

is printed in 9-point Palatino italics font. The two are not the same font.

I had always thought that Courier was a "font." But, as you can see, technically 10-point Courier is a font. Twelve-point Courier is another font. Ten-point

Figure 1. The ruler line you'll see when you change the line spacing and tab settings on your document using the WP 2's Format key (F1-4).

**You can make
your point more
effectively by
improving your
document's
appearance.**

Courier Bold is yet another font, and so on. A more correct description would be to call all the Courier fonts a "font family."

GOING IN STYLE

Let's say that you are writing a letter to your Congressperson with a suggestion on how you can help their reelection campaign. In particular, you want to emphasize how the Tandy notebook computers have the right stuff to generate the requisite form letters to his or her

constituents. Naturally you'll want to make sure that your key point is noticed by printing it in boldface type.

You select a printer font through the Style menu.

To alter the style of your text, first select the text you want by pressing F1-9 (hold down the F1 key and press 9); then move the cursor to the end of the text you want boldfaced. Next, select the Style menu by pressing F1-5. A small menu will pop-up over your text:

F1-B Boldface
F1-U Underline
F1-F Other font

To "turn on" the boldface attribute use the cursor keys to highlight *Boldface* and then press ENTER. You will see a reverse video B at the beginning and end of the text you've selected.

Choosing F1-U (underline) causes the selected text to be underlined when you print it.

The *Other font* selection seems like a strange selection. What other font? Well, remember back two columns ago. One set of selections on the Layout menu (F2-4) was the printer control codes to select your printer's boldface and underline fonts. There is a selection for an *Other font*. You might put in, for instance, the control codes to select an italics font for the *Other* selection. Thus, when you select the *Other font* above, the printer code for italics will be sent to your printer for

the text you've selected while you print your document.

Changing one's mind is a writer's prerogative, which is why computers were invented to make changes easier to make.

You can remove the formatting codes by deleting them with the *Delete* or *Backspace* keys. Don't forget to erase them in pairs or you will get some unexpected and interesting visual effects in your printed text.

FORMAT

The Format (F1-4) key controls the line spacing and tab settings for your document. When you press F1-4, you should see a ruler line up over your document that looks something like Figure 1.

The linespacing control sets how many lines of paper each line of text occupies. For instance, a setting of 2 produces a double-spaced document. I do this when I want a copy to mark up with red pencil.

To set the linespace number, enter the Format menu by pressing F1-4. Then press the *Down Arrow* key. The cursor should be on the 1 after *Linespace*. Press

**Changing one's
mind is a writer's
prerogative.**

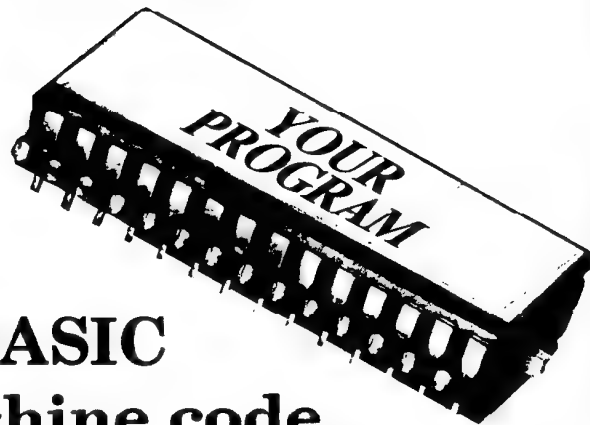
the number that you want followed by an *ENTER* to return you to your document. If you press the *Cancel* key instead of the *ENTER* key, then your settings will not be recognized.

The tab settings are much like the tab stops on a typewriter. The T's on the ruler line indicate the column at which the cursor stops when you press the *Tab* key. The default setting is for tab stops every five columns.

To change tab stop positions, use the arrow keys to position the cursor over a tab stop. Use the minus (-) key to remove the tab stop. Type a T to set a tab stop. Do this everywhere you want or don't want a tab stop. When you are finished, press the *ENTER* key to record your new settings. Pressing the *Cancel* key restores your original settings.

Many desktop word processors use a default tab stop every eight columns. If

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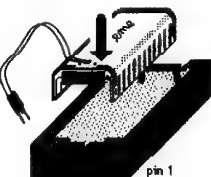
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F1/F2 — WP-2

you transfer your document to your desktop machine for polishing, you can make the formatting more compatible with your desktop word processor using this setting.

Create a ruler template. To do this, open a new document (F1-N). Set the tab stops to match your word processor. Then exit the file. Whenever you start a new document, make a copy (F1-C) of the template file to a working file where you can start your document rather than start a new document, and you automatically have your custom ruler line already set up.

PRINT—THE FINAL FRONTIER

When you've finally finished wordsmithing, you've reached the time to commit your precious prose to paper (wasn't the computer supposed to propel us into a paperless society?). You do this through the Print function. Pressing F2-5 prints your document according to the parameters that you've set during all of our discussions to date.

As soon as you press F2-5, the WP-2 prints the document. Make sure that your printer is connected, on line (make

Wasn't the computer going to give us a paperless society?

sure your online light is lit), and that the paper is ready and aligned. The WP-2 is smart enough to detect if there is no printer hooked up or if it is not on line. It'll wait until you make all the right adjustments and press the ENTER key.

If it was a big mistake (printing, not your document), just press the Cancel key (in the upper left corner of the keyboard) and you will return to your document.

REFLECTING

Now let's try and connect the Print and Style functions with the discussion of printer setup of two months ago. Remember that you had to specify your printer's codes to turn boldface on and off? (If you have a standard IBM/Epson-compatible printer, which most are, then these codes are loaded into the WP-2 by default).

When you select a portion of text to

be, say, boldfaced, the WP-2 gives you a visual indication by displaying a reverse video B bracketing the selected text.

But what is actually stored in your file is a pair of *null bytes*, one to mark the start of boldface type and one to end boldface type. It isn't until you actually print your document that the printer code for boldface type is substituted on the fly for the zero bytes. When the WP-2 print routine encounters the first zero byte it sends out the printer code for boldface on instead of the zero. When it encounters the second zero byte it sends out the printer code for boldface off.

Different codes are used for underline and the *Other* style. I'll cover these in detail in a future series on printers.

WINDING DOWN

Last month we discussed page layout for the WP-2. This month we covered text formatting. But I intend to take a break from document writing, the WP-2's forte.

Next month I'll start a series on "Big Iron Connectivity," which will focus on using the Telcom feature to exchange information with remote computers and desktop machines. To date, I've been covering how the WP-2 is useful for creating and publishing documents by itself. The WP-2 can play a useful role in enhancing the use of your desktop system, also.

This is your column. I want you to help define the "yellow brick road" for me to follow. Fire up your WP-2 and send me a letter in care of Portable 100 or directly at P.O. Box 28181, Santa Ana, CA 92799-8181. If you prefer the electronic medium, use GEnie address STAN.WONG, CompuServe address 70346,1267, or Internet address dasun!wongs@Sunkist.West.Sun.Com.

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Reach Out and Touch the World ...

With your computer, it's a lot easier than you might think.

by Tony B. Anderson

Telecommunications opens up the world to the computer user, a world of access, of information, a connectivity undreamed of until the last few years.

Aside from the purely business uses of telecommunications, there is a world of public and private bulletin board services (BBS's) out there, with people to meet, programs and information to download, conferences to attend, and forums where you can obtain and discuss the latest information on everything from computer science to the correct water temperature for your aquarium.

The growth of communications services in the last decade is absolutely astounding! And it's all available to you—however much you can afford, by simply adding a communications program and modem to your computer, and paying the phone or connect charges to plug into the international network. These are not just the commercial services like CompuServe, GENie, Delphi, Prodigy, and others, but an entire world of computer-based information just waiting to be tapped.

Many pundits feel that in the coming decades the differences between the haves and the have-nots, will be measured by access to information.

COM PROGRAMS

One of the first things many new PC laptop owners want to do is get a communications (TELCOM) program working so they can dial out and touch the rest of the world via modem—to say nothing of downloading scores of “free” software for their new machine.

PROCOMM

Procomm is available in two versions,

shareware and the “new and improved” commercial version. The shareware version, *Procomm* 2.4.3, is available for downloading practically everywhere, and is also available from several of the public domain and shareware disk sellers. The shareware version has a registration fee of \$50.00, while the commercial version, *Procomm Plus*, sells “on the street” (mail order) for about \$65 to \$75

The differences between the haves and the have-nots, will be measured by access to information.

Of course the commercial version has lots of bells and whistles that the shareware version doesn't have—a lot of which aren't really necessary, but are “the latest toy” goodies that the power users can't do without, once they've seen or used them. But for *getting on line* the shareware version is just right.

Both versions are supported by the company in the Datastorm forum on CompuServe. (GO DATASTORM)

SCRIPTS

One advantage of both versions is that

they offer a scripted control language—sort of a basic “you say this; I say that” language, which is perfect for creating simple, scripted programs for online use. You can, for example, create a script to log on to your favorite service or forums, download messages for offline reading, or even specific files from libraries, all automatically. A simple logon script for CompuServe is illustrated in Figure 1.

To create a fully-automated script, you just have to add waits, or pauses, for the familiar landmarks (“prompts”) of the system, and transmit responses expected by the system.

A number of other commands are available in the script language, many of which are not relevant to our discussion, but available to advanced users to create almost any kind of scripted program needed. It's an easy matter to set up separate scripts for routine tasks—like downloading a series of messages for offline reading, for downloading specified files from libraries, for accessing and reviewing online news services, etc. You just create a script for each dedicated activity, and sign on with that script.

The dialing directory allows up to 100 entries, and each “entry” can call up a specified script file, send it, and interact with the communications service. And even though you might use only one local phone number to access a given service or BBS (where, say, you want to get on to different CompuServe forums), you can have several identical entries in the dialing directory which call different scripts.

Of course, *Procomm* supports internal and external modems, along with direct RS-232 serial port connections, at most common baud rates from 300 to 19,200,

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Circle 190 on reader service card.

with options for parity, number of data bits, stop bits, etc. You can also customize modem, terminal, and protocol setups, and change from one to another while on line, with little fuss. *Procomm* supports ASCII, Xmodem, Kermit, CompuServe B and other popular file transfer protocols. You can establish, store, and send macros—sending repetitive groups of characters by pressing only one or two keys instead of typing the whole group over and over.

There are a number of help screens that pop up by pressing the ALT key and a letter key—ALT-S, for example brings you the "Setup Menu" screen; ALT-P brings up the communications "Parameters" menu; ALT-D brings up the "Dialing Menu", etc., and ALT-F10 brings up a master help menu, which lists all the other alternate key options.

Overall, *Procomm* is easy to use and reliable. A fitting addition to the software base for our PC Model 100 work-alike.

SHAREWARE DISK

This month's shareware disk is the full-featured version of *Procomm* 2.4.3, with sample script files and manual on disk (you print it yourself), configured for an LCD screen. \$6.00 postpaid from

```
PAUSE 1
TRANSMIT "^C"
WAITFOR "ID:"
TRANSMIT "(ID number)"
TRANSMIT "^M"
WAITFOR "word:"
TRANSMIT "(password)"
TRANSMIT "^M"
```

Figure 1. A simple logon script to sign onto CompuServe. The "PAUSE 1" is a one-second time delay to allow stabilization after connecting to the system and may be adjusted according to your local network needs, or deleted entirely. The ID number and password you get from CompuServe when you create an account with them.

Tony Anderson, P.O. Box 60925, Reno, NV 89506.

Tony Anderson, a sysop on CompuServe's Model 100 Forum for six years, has been a frequent contributor of articles and programs to the Forum's libraries, and also develops and sells commercial software for the Model 100 family, including the popular CRDFIL database. He'll be happy to answer questions sent to him via CompuServe's MAIL facility (send to 76703,4062), or by postal mail at P.O. Box 60925, Reno, NV 89506 (please include SASE if requesting a reply).



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COMPATIBILITY: Model 100, 102, 200, NEC 8201/8300, Kyocera KC-85, Olivetti M10.

Model T Telecommunications

Send your words across the map, not just the Mac.

by Gene Wilburn

Ah, the joys of telecommunications. While not as immediate as word processing, spreadsheets, or jazz piano, *TELCOM* plus a modem lets you tap into a vast online network. The result is a cross between ham radio and the daily newspaper.

The "network" includes computer systems such as bulletin board services (BBS's), CompuServe, GENIE, MCI Mail, electronic banking services, your corporate office system, or even another Model T. Because you're using a telephone line, distance is not a factor. I can call the Portable 100 BBS in New Hampshire or the Club 100 BBS in California from my home office in Canada (as long as I hide the phone bill from my wife).

Last month I looked at *TELCOM* for transferring files from a Model T to a PC or Mac. The principles behind file transfer apply equally to general telecommunications, or just plain communications for short. The only new factor I'll introduce is a modem—a hardware unit (standalone or built in to the computer) that allows you to communicate on the telephone system.

USING TELCOM

To run *TELCOM*, place the cursor on *TELCOM* and press *ENTER*. When you do this, you will see five function keys mapped out on the bottom line: *Find*, *Call*, *Stat*, *Term*, and *Menu*. As you may recall, you use the *Stat* (status) key to set the correct communication parameters. A typical *Stat* line looks like *37E1E,10 pps* or *M7E1E,10 pps* on the Model 100/102 or *37E1ENN,O,10 pps* on the Model 200.

It's important to set the Model T correctly, so let's take a closer look at this string. Column one of the *Stat* display determines the *speed* (often referred to incorrectly as *baud rate*) of the session

and if you're going to communicate via an external modem or a built-in internal modem. If external, column one is generally set to 3 (300 bps), 5 (1200 bps), or 6 (2400 bps), reflecting the highest speed of the modem itself. To use the internal modem, column one will be set to *M*, for modem. The correct term for speed is *bits per second*, abbreviated as *bps*.

The second column, a 7 in the examples, represents the number of *data bits* sent and received. This is also called

***The result is a
cross between ham
radio and the daily
newspaper.***

the *word length* in the Tandy manuals. Eight bits are always sent for each character, but if the agreed-upon number of data bits is only 7, then the last bit is used for something else called *parity*. Seven bits is enough to display standard ASCII. All eight bits are required to send and receive graphics characters on the Model T's.

The third column represents *parity*. Its standard options are *E* for even parity, *O* for odd parity, or *N* for none. The two most common communication setups are 7E (for seven data bits, and even

parity) and 8N (eight data bits, no parity). The parity bit is formed from the leftover bit of a seven-bit character. If you use all eight bits, there is nothing left over to form a parity bit from, so there is none. Parity doesn't do much, except mess up your communications session if you get it wrong. It's a carryover from the early days of computing when it was used as a primitive error-detecting scheme.

Column four, a 1 in the examples, represents what is called the *stop bit*. All you need to know about stop bit is that it is always set to 1. There are some historical devices that require more than one stop bit, but you'll never run into them. Is there a start bit, you ask? Sure, but since it is always set to one, you're never asked to set it yourself. It's invisible to you.

Column five represents the status of something called *Xon/Xoff protocol*. *E* means enable it, *D* means disable it. What is it? It's a simple method of letting one system tell another, "wait a second until I catch up," when it starts to get behind. It is best to have it enabled.

For the Model 200 there are three extra columns, not counting the comma, that usually read *NN,O*. The first *N* stands for normal settings for ASCII control codes. Its opposite is *I* for ignore control codes. The second *N* represents "normal line feed." The *O* stands for originate mode, as opposed to *A*, which is answer mode.

The final part of each *Stat* line is either *10 pps* or *20 pps*, for the number of pulses per second (the *pulse rate*). In addition, the Model 200 offers *T*, for tone dialing.

That's a lot to absorb in one swoop. Take a break. Have a Baskin-Robbins ice cream cone.

MODEMS

Let's go past setting the *Stat* line. You

MODEL T JOYRIDE

need to know what kind of modem you're using. There are really only two choices—internal and external—and internal is only a standard option for Tandy Model T's. External modems come in different shapes and speeds, from 300 bps acoustic modems to 9600 bps direct-dial wonders. Most external modems follow what's called the Hayes, or "AT," command set. The Tandy internal modems have their own unique command set.

If you use an external modem, you must attach an appropriate modem cable to the Model T serial port. Some pocket modems plug in directly with no cables required. All modems require you to connect to a telephone line. There is a cable available for Tandy internal modems that allow them to be connected directly to a standard phone jack. Tandy once sold a set of acoustic couplers that allowed the internal modem to be attached to a standard telephone handset (before design changes to handsets destroyed the fit). Consequently there is a switch marked *DIR/ACP* on the side of Tandy Model T's. You have to set the switch to *DIR* for direct connect or *ACP* for acoustic coupler.

SPEED PROBLEMS

Before I go any further, you should be aware that there are some practical speed limitations that reflect Model T hardware limitations. For example, you cannot realistically expect to use a Model 100/102 at speeds higher than 300 bps for online sessions. The screen refresh on the LCD is so slow that, when you are capturing incoming text, the 100/102 will lose characters. The Model 200 can be used reliably at 1200 bps.

The Model 100 was breathtaking in 1983. All those programs *plus* a built-in 300-bps modem was a dream come true. Back then a 1200-bps modem cost more than a 9600-bps modem does today. Systems supported 300 and 1200 bps, with 300 being the most commonly-used speed.

Today 2400 bps is the most common speed for modems, with 9600-bps modems gaining significant momentum. 1200 bps modems are considered archaic—almost unusable. Where does that leave the 300-bps modem of the M100? No point in glossing this over. The built-in 300-bps modem that was once a jewel is now very limited. However, it can still fill a role as an autodialer or a simple message retriever on systems that support 300 bps.

DIALING OUT

Before trying to dial out, make sure

the Model T is in *originate* mode—i.e., it is going to originate the call. On the Model 100/102, you do this by sliding a switch to *ORG* on the side of the computer. As you saw from the earlier examples, you set Model 200's to *ORG* mode through the *Stat* line.

The Model T's with internal modems are curious beasts. - The best way to dial another computer system is to place the phone number in the *ADRS.DO* file. You type in the name of the system and put its telephone number alongside (followed by <>), surrounded by colons—e.g., *CIS :5551234<>:*. The brackets (<>) are essential; without them, the computer will hang up immediately after dialing. You call up the entry with the *Find* key. When you have the correct one displaying on screen, you press the *Call* key. Then you listen for the characteristic

The Model 100 was breathtaking in 1983.

tones of the modems as they connect (or try again later if you hear a busy signal). Once they're connected, you are usually prompted for a login and a password, which you can then type.

The Tandy units have some interesting tricks you can program into your dialing entries to have your name and password typed for you automatically. These lie beyond the scope of a beginner's column, but there's plenty on this

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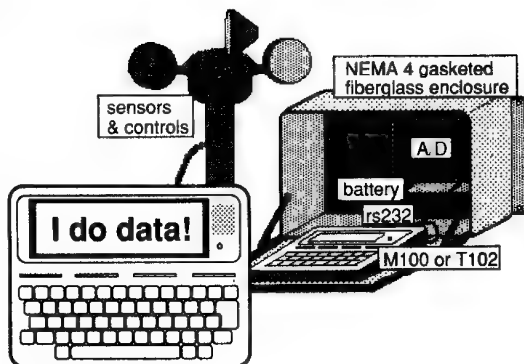
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in the Model T manual if you want to pursue it.

When dialing out with a Hayes-compatible external modem, you must type the command that tells the modem to dial. It always starts with *ATD*. For pulse dialing you add a *P* and for tone dialing you add a *T*. Hence dialing a number takes the form *ATDP 5551234* or *ATDT 5551234*.

When you're connected, you can see the responses from the other system appear on your screen. If your screen looks odd, you probably have the protocol wrong. If you see two characters every time you type a printable key, press the key that says *Half* and it will toggle to *Full*. This sets what's called *duplex*. If you can't see what you're typing, toggle the duplex key from *Full* to *Half*. Most systems work at full duplex.

Don't be surprised if words scroll by too fast on your screen. Most communications are set up with an 80-character by 24-line display in mind. You can press the *Prev* key to see that previous eight lines. Some systems allow you to adjust the number of characters on a line and the number of lines on a screen. If it does, set it to 39 characters by 8 lines and you'll have a nicer session.



The OWL is our M100/T102-based **On-site Weather Logger**. In addition to the computer, the OWL consists of our analog-to-digital hardware to convert sensor readings into digital form, *HOOT* software to direct the process and display the results, and other elements like our powersaver hardware and a form-fit industrial case. You already know about the screen, the keyboard, the programmability and the economy of the M100/T102 computer. In combination, the OWL is a total solution for environmental monitoring & control. It has found application in everything from planning pest & frost control strategies in orchards large and small, to tracking endangered species of bats at their nest sites, to control of incubators and HVAC.

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UPLOADING AND DOWNLOADING

Typing while you're on line is pleasant enough, but you can use your Model T to do more. You can, for instance, compose E-mail messages ahead of time and *upload* (send) them to your *host* system—the system you're calling. Or if you know someone with a computer and modem, you can send and receive long messages without high long-distance charges.

To upload messages, create a message in the normal way with *TEXT*. When you are at the place on your host where you would normally type a message, press the *Up* key (for "upload"). Type in the name of the file and set an appropriate width when it prompts for *Width*: Sixty is a good response. Then, like magic, your precomposed text goes across the telephone system to your host as if you had suddenly picked up astonishing typing skills.

Conversely, you can "capture" text, such as E-mail messages and bulletins into files you can edit and print out on your Model T. This is called *downloading* and is activated by pressing the *Down* key. Once you press the key, everything you see on the screen after that is also captured into a file name of your choice until you press the *Down* key again to stop capturing the incoming data.

Bear in mind the memory limitations of a Model T. You can't download massive text files, but you can certainly download a useful number of messages per session.

BEYOND BASICS

Communications is a fascinating activity, and the Model T's offer some wonderful tricks and techniques for customizing your telecommunication sessions. Model T *BASIC*, for instance, allows you to program your modem or communications port directly. There are several public-domain Model T programs that automate dialing to services such as CompuServe. You can find plenty of exciting communications software on CIS, the Portable 100 BBS, or the Club 100 BBS.

Next month I'll return to word processing, where I'll begin a comparison of the two popular Model T ROM's: *Super ROM* and *Ultimate ROM II*.

You can communicate with Gene via CompuServe (his ID is 72435,732), through regular mail in care of Portable 100, or directly at 91 Inglewood Drive, Mississauga, Ontario, Canada L5G 1X9. Please add sufficient postage if you mail to Canada and an international reply coupon when requesting a reply.



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Vol. 8, No. 6
September 1991

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